100 PRODUCTS RATED: AUSTRALIA'S BIGGEST TECH BUYER'S GUIDE

$8.95 including DVD

AUSTRALIAN

PC USER

MARCH 2008 / AUSTRALIA'S TOP-SELLING TECHNOLOGY MAGAZINE

NE REVEAL THE BEST NOTEBOOK FOR EVERY NEED

NOTEBOOK MEGA TEST

- Budget laptops
- Ultralites
- High-powered portables

TO THE RESCUE!

20-PAGE TROUBLESHOOTING GUIDE

VIRUS AND FILE RECOVERY + VISTA, XP, UBUNTU SOLUTIONS + HARDWARE AND NETWORK FIXES

RCH 2008 / EXCLUSIVE SOFTWARE / VIDEO GUIDES / RESOURCE KIT / GAMES

PC USER DVD

FREE OS WORLD EXCLUSIVE

PC User's own ultra-slim, ultra-fast and ultra-powerful operating system is based on Xubuntu 7.10, can be trialled on a 'live' CD, installed on just about any old PC or used as a rescue disc.

Copy ...s and DVDs

...k up any non-copy-...tected disc with the ...ull version of VSO ...ware's BlindWrite 6.

Power up Windows

VALUED AT $45

Tweak hidden settings, create multiple desktops with Ashampoo PowerUp XP Platinum 2.

Learn the guitar

FREE LESSONS

This new version of GCH Guitar Academy SE includes eight weeks of guitar lessons.

2 free office suites

FULL VERSIONS

Two of the hottest new Office alternatives: IBM's Lotus Symphony and OxygenOffice.

...0 video tutorials

Exclusive guides on how to use UserOS Ultra and more.

Troubleshooting resource kit

All you need to recover files, diagnose hardware problems, create rescue discs, kill viruses and more.

*UserOS Ultra is provided as an .iso file, which needs to be burned to CD before use. Like other free Linux distributions, tech support is not provided. UserOS Ultra ...ork with most PCs with at least 256MB of memory and 1GB of hard disk space, but there are no guarantees. *The full versions require online registration, and ...on sites are active for a limited time only. *Use of this DVD is subject to terms of use contained on this disc. *This DVD-ROM requires a computer DVD drive.

IF YOUR COVER DISC IS MISSING, PLEASE ENQUIRE AT PLACE OF PURCHASE

30 pages of tips

Working without Office, avoid P2P shaping

15 smartphones:

Stay connected and organised anywhere

Latest Lab tests:

1,000GB hard drives, new X48 motherboard

Gear and games:

Pocket web browser, Call of Duty 4 guide

$8.95 inc. GST

NZ$8.95 inc. GST

ISSN magazines

03

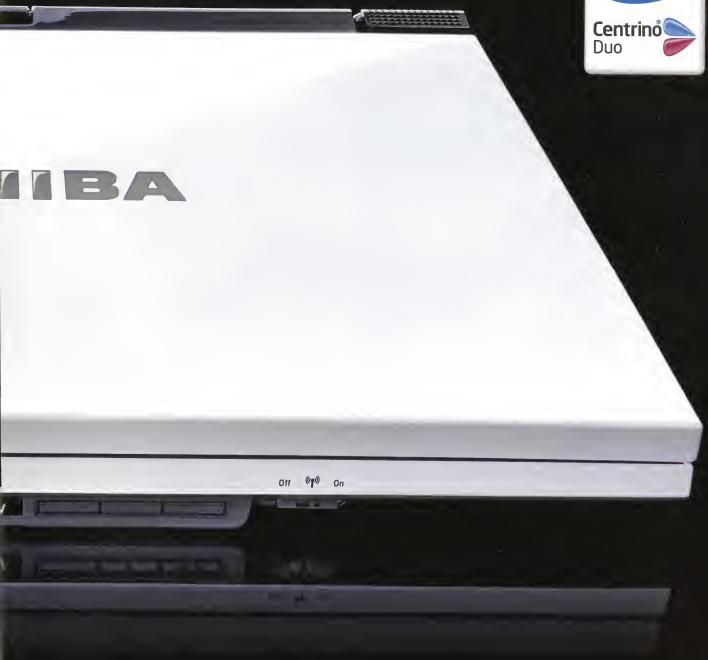
9 313006 001416

Intel, the Intel logo, the Centrino logo and Centrino, are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.
Toshiba (Australia) Pty Limited ABN 19 001 320 421.

Use as a Notebook or Tablet PC

Leading edge technology (literally)

Toshiba recommends Windows Vista™ Business.



The Toshiba Portégé Tablet PC with built-in 3G. Real-time email and calendar notification even when your notebook is closed or in sleep mode. That's not the only edge you'll get. The Portégé R400 comes Vista™ loaded and powered by Intel® Centrino® Duo Mobile Technology. Its stylish, scratch-resistant, clear-coated case encloses a 12.1" backlit wide-screen display and a biometric fingerprint reader.

Contact your Toshiba Authorised Reseller, call 13 30 70
or visit www.toshibanotebook.com.au/r400

TOSHIBA
Leading Innovation >>>

Contents

INSIDE THIS ISSUE

Reviews in this issue ---- 5
Privacy notice ---- 5
DVD contents ---- 6
Inside *PC User* ---- 7
Editorial ---- 8
Emails & letters ---- 10
Update: what's in store for 2008 ---- 12

_TEST BENCH

Hardware & software reviews ---- 15
Upgrade report ---- 20

_FEATURES

2008 notebook mega test ---- 24
Stay connected with a smartphone ---- 36
To the rescue! Troubleshooting guide ---- 43
- Our custom-made operating system ---- 44
- Repair with a reboot ---- 48
- Avoid Vista disasters ---- 51
- Help for your hardware ---- 54
- Connectivity solutions ---- 56
- Build a networking toolkit ---- 60
- Fix problems in Ubuntu ---- 62

_HELP STATION

Q&A: your technical questions answered ---- 73
Avoid P2P shaping ---- 78
Tips for email newsletters ---- 80
Watch YouTube clips with ffdshow ---- 81
Show off your favourite pics ---- 82
Shots from on high ---- 83
New office freebies ---- 84
DIY music player ---- 87
Cover DVD tutorials:
- Tame your system ---- 88
- Copy discs with BlindWrite ---- 89
- Learn to play guitar ---- 90

_AFTER HOURS

Cool & new ---- 91
Movies & music on the go ---- 94
Previews ---- 100
PC game guide ---- 102
Verdicts ---- 104

_BUYER'S GUIDE

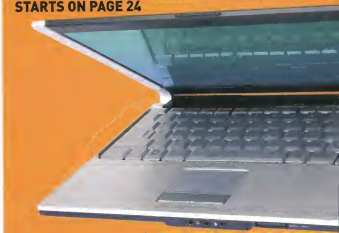
Best PC specs & 100 products rated ---- 107

_COVER STORY

Notebook mega test

* BUDGET LAPTOPS
* ULTRALITES
* HIGH-POWERED PORTABLES

STARTS ON PAGE 24



TO THE RESCUE!

20-PAGE TROUBLESHOOTING GUIDE

STARTS ON PAGE 43

_OTHER FEATURES

- **WORKING WITHOUT OFFICE** PAGE 84
- **AVOID P2P SHAPING** PAGE 78
- **15 SMARTPHONES TESTED** PAGE 36
- **1,000GB HARD DRIVES** PAGE 20
- **NEW X48 MOTHERBOARD** PAGE 21
- **POCKET WEB BROWSER** PAGE 16
- **CALL OF DUTY 4 GUIDE** PAGE 102

Reviews

IN THIS ISSUE

_HARDWARE

Acer Aspire 5315 ---------- 24
Acer Aspire 5920 ---------- 26
Acer Aspire 5920G --------- 28
Acer TravelMate 6292 ------ 30
ASUS EN8800GT 1GB ------ 22
ASUS F5R ---------- 27
ASUS G2S ---------- 34
ASUS M530W ---------- 38
ASUS P735 ---------- 42
ASUS R2Hv ---------- 31
ASUS U1F ---------- 32
ASUS U3S ---------- 31
ASUS U6S ---------- 33
Bio Bytes ---------- 93
BlackBerry 8800 ---------- 39
BlackBerry Curve 8300 ---- 36
BlackBerry Pearl 8120 ----- 40
Corsair Flash Padlock 2GB ---------- 16
Dell 3008WFP UltraSharp ---------- 15
Dell Inspiron 1420---------- 25
Dell XPS M1330 ---------- 30
DVX555u set-top box ------- 92
Fujitsu LifeBook E8410----- 29
Fujitsu LifeBook P1610----- 33
Fujitsu LifeBook T2010----- 32
Gigabyte GA-X48-DQ6------ 21
hiptop slide ---------- 40
HP Compaq 2510p --------- 31
HP Compaq Presario C719TU---------- 24
HP Pavilion dv2632tx------- 27
HP Pavilion dv6614tx------- 28
HP Pavilion dv9613tx------- 34
HP Pavilion tx1219au------- 31
HTC Touch Dual ---------- 41
HTC TyTN II ---------- 36
i-mate Ultimate 6150 ------ 41
i-mate Ultimate 8150 ------ 40
i-mate Ultimate 9502 ------ 37
Intel Core 2 Duo E8400----- 21
Jaycar CS2275 ---------- 94
Jaycar QM3782---------- 95
Jaycar QM3785---------- 95
JVC KD-AVX11 ---------- 94
Kenwood DDX6039---------- 95
Microsoft Mobile Memory Mouse 8000 ---- 92
Mio Digiwalker A702 ------- 92
Motorola MOTO Q 9h ------- 37
MSI EX600 ---------- 27
MSI EX700 ---------- 26
MSI GX600 Extreme Edition ---------- 33
MSI GX700 ---------- 28
Navman S90i---------- 93
Netgear SPH200D --------- 93
Nokia E51 ---------- 41
Nokia E61i ---------- 37
Nokia E90 Communicator ---------- 37
Nokia N95 8GB---------- 41
Palit 8800GT Sonic --------- 22
Palm Treo 500---------- 37
Palm Treo 680---------- 39
Palm Treo 750---------- 40
Panasonic Viera TX-32LXD700A ---------- 91
Pioneer AVH-P5950DVD---- 95
Pioneer DEH-P9850BT----- 96
Pioneer DreamBook Power M57RU---------- 33
PocketSurfer 2---------- 16
Razer Lachesis---------- 91
Samsung BlackJack ------- 39
Samsung SpinPoint F1 HD103UJ---------- 20
Seagate Barracuda 7200.11 ST31000340AS--- 20
Sony BOX124P5B ---------- 96
Sony CDXGT370 ---------- 96
Sony Ericsson P1i ---------- 38
Sony VAIO VGNCR25G------ 28
Sony VAIO VGNNR17G------ 27
Sony XSGTF6935B --------- 96
Toshiba Satellite A200------ 24
Toshiba Satellite U300 ----- 29
TP-LINK TD-W8920G ADSL2+ router ---------- 16
Western Digital Caviar GP WD10EACS ---------- 20

_SOFTWARE & SERVICES

Access 2007---------- 19
Alpha Five 8---------- 19
Beowulf---------- 106
BlackSite Area 51 --------- 105
Blazing Angels 2: Secret Missions of WWII ------- 105
Boris Continuum Complete 5---------- 18
Clive Barker's Jericho----- 105
Filemaker Pro 9---------- 19
Frontlines: Fuel of War---- 100
Nero 8---------- 18
Newtek SpeedEdit 1.5------ 18
OpenOffice.org Base ------- 19
Pirates of the Burning Sea---------- 100
Puzzle Quest: Challenge of the Warlords--------- 106
Sega Rally---------- 106
Super Mario Galaxy ------- 104
Tom Clancy's Rainbow Six Vegas 2---------- 100
Uncharted: Drake's Fortune ---------- 104

Privacy Notice

This issue of *PC User* may contain offers, competitions or surveys which require you to provide information about yourself if you choose to enter or take part in them (Reader Offer). If you provide information about yourself to ACP Magazines Ltd (ACP), ACP will use this information to provide you with the products or services you have requested, and may supply your information to contractors that help ACP to do this. ACP will also use your information to inform you of other ACP publications, products, services and events. ACP may also give your information to organisations that are providing special prizes or offers and that are clearly associated with the Reader Offer. Unless you tell us not to, we may give your information to other organisations that may use it to inform you about other products, services or events or to give to other organisations that may use it for this purpose. If you would like to gain access to the information ACP holds about you, please contact ACP's Privacy Officer at ACP Magazines Ltd, 54-58 Park Street, Sydney, NSW 2000.

Ad list

ACO ---------- 124
Altech Computers 113, 114, 115
Anyware Computer Accessories...116, 117, 127
Belkin---------- 23
Brother---------- 67
Cartridge Depot Australia---------- 125
Cooler Master---------- 79
Corporate Software---------- 120, 121
CyberLink---------- IBC
Epson ---------- OBC, 11, 31
FortuneTec---------- 126
Foxconn---------- 64
Grass Valley ---------- 101
HP ---------- 69
Jaycar---------- 97
Kaspersky---------- 72
LG---------- 17
MD Web Hosting---------- 71
Mindscape---------- 27, 47
MSI ---------- 35
Scorpion Tech ---------- 118, 119
Software Time ---------- 129
Swann ---------- 77
TEG Computers ---------- 122, 123
Toshiba---------- IFC, 3
TPG---------- 59
Uniden---------- 9

DVD Contents

On this month's DVD you'll find UserOS Ultra — a fast and powerful operating system that won't hog system resources. It's perfect to use as a rescue disc or as an everyday OS for PCs old and new. Other full-version programs on offer this month: an app for tweaking Windows; a disc copy tool and a program for learning to play guitar. Also, don't forget to check out our exclusive video tutorials.

Using the DVD

The *PC User* cover DVD requires a DVD-ROM drive. Internet Explorer 6 or later is recommended for easy installation of the software. Most of the software on the disc requires a fairly recent version of Windows, although each program has individual requirements, which are indicated on the disc. **Please note** the other requirements and limitations on the DVD cover. **Don't have a DVD drive?** We'll mail you a free CD with selected software from the DVD. Just go to **www.pcuser.com.au/cdmail**. This month's CD code is PCUCD0308A. **Need help?** See the back cover of the DVD for details on how to use the DVD and how to get help.

NOTE: *UserOS Ultra is provided as an .iso file, which needs to be burned to CD before use. Like other free Linux distributions, tech support is not provided. UserOS Ultra should work with most PCs with at least 256MB of memory and 1GB of hard disk space, but there are no guarantees. *The full versions require online registration, and registration sites are active for a limited time only. *Use of this DVD is subject to terms of use contained on this disc. *This DVD-ROM requires a computer DVD drive.

_TROUBLESHOOTING RESOURCE KIT:

RESCUE DISCS
Bart's PE Builder, UserOS Ultra 7.10, UBCD4Win

RECOVERY TOOLS
Recuva Restoration, ProduKey, Recover My Files, TestDisc & PhotoRec

SECURITY TOOLS
AVG Free, NOD32, Spybot – Search & Destroy, SyncBack, HijackThis, HiJackFree, Eraser, CCleaner, Diagnostics PC Wizard, SIW, DriveGrabber, Windows In A Box

_SOFTWARE:

FREE FULL VERSIONS
Ashampoo PowerUp XP Platinum 2, GCH Guitar Academy SE, VSO Software BlindWrite 6, UserOS Ultra

APPLICATIONS
IBM Lotus Symphony, OxygenOffice, PIXresizer, DriveHQ, Web Album Publisher, DAZ Studio 3D Bridge for Photoshop, XnView 1.92

MOBILE
T-Crisis 100%, BitPim, Magic Bubble

ONLINE TOOLS
NETEagle, Express Talk

SYSTEM UTILITIES
Auslogics Disk Defrag, Auslogics Registry Defrag 4.1.5, Software Theories Natural Word, PDF-XChange Viewer, EMCO MoveOnBoot, MiniMinder, PeaZip, 7-Zip, Glary Utilities

BROWSERS
Avant Browser, Maxthon, Mozilla Firefox, Slim Browser, Netscape Navigator, Opera

PC USER EMERGENCY PACK
NOD32, Grisoft AVG 7.5, SpamBayes 1.04, Spybot – Search & Destroy 1.4, SyncBack, ZoneLabs ZoneAlarm

_ENTERTAINMENT:

GAME DEMOS
Nitro Stunt Racing, Gish

FREE GAMES
Navy Field: Resurrection of the Steel Fleet, Voyage Century Online

_VIDEO TUTORIALS:

Installing UserOS Ultra, Using UBCD4Win, Make your own WMA player in Visual Basic, Fixing images shot from airplanes in Photoshop, Getting started with IBM Lotus Symphony, Switching your PC to boot from an optical drive, Creating a video slideshow, Get started with Ashampoo PowerUp XP Platinum 2, Get started with Guitar Academy SE, Get started with BlindWrite 6

_MAG STUFF:

Macros of the month, Visual Basic: code, Zoho Office, OxygenOffice, IBM Lotus Symphony, UserOS Ultra 7.10, UBCD4Win, Keyfinder, Media Player Classic, ffdshow

*** Unless indicated otherwise, the listed programs may be shareware or trial versions.**

PC User

Your guide to *PC User*'s product reviews and editorial policies.

_LISTED PRICES

The listed pricing in *PC User*'s reviews are generally recommended retail prices. But where possible, we've used the lowest common prices that we could find on Australian online retail sites during early January. We do this because street pricing often bears little resemblance to the RRP. However, note that pricing varies and changes rapidly, so shop around yourself. Start with the online retailers advertising in *PC User*, **www.staticice.com.au** and an Australian Google search. Remember to check out the delivery and other charges, too.

1 AUSTRALIA'S TOP-SELLING COMPUTER MAGAZINE PC USER

CIRCULATION: 53,066 copies sold per issue in Australia, plus 4,080 copies sold overseas (ABC Circulation Audit, June 2007).

READERSHIP: 281,000 readers per issue (Roy Morgan Readership Survey, September 2007).

WINNER of the 2004 Sun Microsystems IT Journalism Award for 'Best Technical Title'.

At *Australian PC User*, we pride ourselves in the quality and independence of our editorial. This is a commercial as well as an ethical policy, because we know that readers expect nothing less. *PC User* is Australia's top-selling technology magazine and our credibility is a key reason for our market leadership. To ensure we maintain our credibility, we insist on writers following strict editorial policies. There are several policies, but here are the most important:

* All reviews and comparisons must be scrupulously fair to every product and brand, but writers should never shy away from the truth. Above all, we must provide independent buying advice that readers can trust.
* Every product must be evaluated as thoroughly as possible, using a repeatable and transparent procedure that reflects real-world usage by readers.
* Every tip, tutorial and piece of advice must be thoroughly researched and tested by the writer.

_EXCLUSIVE BENCHMARKS

To achieve the second editorial policy above, we use objective, quantifiable benchmarks whenever possible. Unfortunately, we found existing benchmark software didn't go far enough for our aim of measuring real-world PC performance. So our hardware writer, Darren Yates, developed our own benchmark suite, UserBench, exclusively for *PC User*.

UserBench is Australia's only home-grown benchmark suite, and we reckon it's the world's best. It brings a level of realism and precision never seen before in PC benchmarks. All of the UserBench benchmarks are based on common, time-consuming tasks — video and image conversions and other tasks that tie up valuable PC time — as well as real games. They allow us to provide in-depth details including actual times, so you can see for yourself how long the system takes to accomplish these tasks. Here's a guide to each benchmark:

* **UserBench Encode 2008.** This benchmark combines audio and video encoding, converting a 12-minute stereo .wav file into five different audio formats: AAC, AC-3, OGG, WMA and MP3. It then encodes a 1,500-frame .avi file into five different video formats: MPEG-2, MPEG-1, WMV, H.264 and MPEG-4 ISO. Each conversion is timed and recorded in frames per second (fps) or megabytes per second (MBps) as appropriate to produce an overall UserBench Encode 2008 score, based on a reference of 10 being a 2GHz Pentium 4 desktop PC with 512MB of memory running Windows XP SP2.
* **UserBench Image 2006.** This loads a 50MB .tiff file into Photoshop CS2, processes it 10 times using different filters, saving it as a .jpg file each time. It then completes the whole process three times. The final result is the fastest of the three runs in minutes and seconds.
* **UserBench Security VR 2007.** This scans 1GB of files using the antivirus tools NOD32 and AVG 7.5 Free Edition. It then uses WinRAR to compress the same files into an archive. It records the scan times and archiving time in minutes and seconds.
* **UserBench Crysis 2008.** *Crysis* is the first game to provide true DirectX 10 graphics and this benchmark animates the *Crysis* demo to provide unrivalled 3D games testing. It enables us to test at a multitude of resolution settings from 640 x 480 to 1,920 x 1,200 pixels. The final results for each test are provided in average and lowest fps.
* **UserBench UT3Demo 2008.** This automates the new *Unreal Tournament III* demo to test DirectX 9/10 speed with an infinite number of tests per run at different resolutions from 640 x 480 to 1,920 x 1,200 pixels. Each test returns an average fps and charts for percentile fps bands.
* **UserBench Half-Life 2: Lost Coast 2008.** Our *Lost Coast* benchmark automates the latest *Half-Life 2* episode, testing DirectX 9 performance using infinite tests per run at various resolutions, with settings for antialiasing and anisotropy.
* **UserBench Battery 2008.** This new benchmark replaces VeriTest BatteryMark 4.01. It times the battery life of a notebook while constantly playing a WMV video clip in the background. The final result is recorded in hours and minutes.
* **Other benchmarks.** We still use third-party benchmarks where they are best of breed. These include Business Disk WinMark 99, which is used to test the data transfer rates of hard drives.

How to read the benchmark results

For most benchmarks that measure performance using time (minutes and seconds), lower scores mean faster performance at that given task. The exception is UserBench Battery because you want a notebook's battery to last as long as possible. For benchmarks that measure frame rate (frames per second) or data transfer (kilobytes per second), higher scores are better. In particular, for gaming, you should look for at least 50fps on average, but preferably more (to allow for future games). In our new UserBench Encode benchmark, look for a Final Score that's as high as possible.

Filtering the rubbish

Not another hare-brained scheme to 'protect' us from the net? **Glenn Rees** pleads for some common sense.

I have a confession to make: I'd forgotten to write this month's editorial before going on holidays. In the old days, I would have been in big trouble. However, thanks to a reminder from *PC User*'s deputy editor and a handy little thing called the internet, it was no big deal.

Sometimes I think people forget the amazing benefits of the net when screaming about all of its problems. Not so reader Luke Macnamara, who, in his thoughtful letter in *PC User*'s February 2008 edition, commented on my November 2007 editorial, which was critical of the internet hysteria frequently publicised in Australia's mass media. Mr Macnamara pointed out the benefits of the net, but then gave an excellent appraisal of its problems, including plagiarism, paedophiles, pornography, privacy and illegal copying.

I take issue with one assertion in Mr Macnamara's letter: my November editorial was not intended to point the finger at the older generation. (I know plenty of older people, including many *PC User* readers, who embrace the internet.) My problem is with ignorant comments about the internet, knee-jerk 'solutions' which usually involve some sort of banning or censorship, and poorly researched or sensational reporting of these issues in the mass media.

However, in most other respects, I agree with Mr Macnamara's letter. I agree there's a problem with plagiarism in schools, with sources like Google and Wikipedia providing tempting targets for plagiarists and headaches for teachers. However, a good teacher can detect the difference between assignments written in a student's own words and copied text. A search of Google and Wikipedia will almost always quickly reveal the source of the copied-and-pasted text.

There may be a significant challenge in training all teachers in plagiarism detection and internet searching. But perhaps an even better solution might be to teach students to research properly using the internet. Students are taught many good things at schools, but in my experience, rarely how to research.

The other problems identified by Mr Macnamara — the 'dark and nasty side' of the internet — are the source of most hysterical mass media stories. Paedophiles, pornography and other net nasties are serious problems that require serious, workable solutions, not the unworkable knee-jerk solutions advocated on talkback radio or by politicians.

Unfortunately, one such unworkable 'solution' looks to be gaining momentum, thanks to the Federal Government's plan to introduce compulsory server-based porn filtering for all internet service providers. Does anyone feel a sense of déjà vu? Haven't we been down this road with the Howard Government, who in the end saw sense and opted instead to provide free (but optional) filtering software for download?

Hopefully, Kevin Rudd and his Telecommunications Minister, Stephen Conroy, will be smart enough to realise that server-based filtering just won't work. It could well add to the cost of broadband for the consumer; plus, a study by the Howard Government revealed that server-based filtering could dramatically reduce internet speed (see **www.netalert.gov.au/programs/research.html**). Personally, I also have a philosophical problem with censorship: who decides what I should or shouldn't see on the internet, and what criteria will be used to block sites? At a practical level, any sort of filtering technology is always fallible anyway: blocking legitimate sites and missing nasties. In fact, it's already been proven that the government's preferred filtering system fails (see **www.australianit.news.com.au/story/0,24897,23001130-15306,00.html**).

So what are the solutions to protecting children from net nasties? By all means, continue offering free filtering software for those parents who want to protect their children this way. However, in my view, education is key. I gave a more detailed explanation in my September 2007 editorial, but briefly, the solutions are quite straightforward: apart from using good, up-to-date security software, the only other things needed are some rules, education, communication and supervision.

In other words, protecting kids in the virtual world is not much different from protecting them in the real world.

Broadband superguide

YOUR COMPLETE GUIDE TO CHOOSING THE BEST BROADBAND AND VOICE OVER IP PLANS FOR YOUR NEEDS, BUYING A NEW ROUTER AND MORE.

NEXT MONTH

www.pcuser.com.au

AUSTRALIAN PC USER

MARCH 2008

VOLUME 20 NUMBER 3

EDITORIAL

Editor GLENN REES
Deputy Editor ANNA RACITI
Chief Sub-Editor/Journalist OLGA JEVDIC
Sub-Editor PETER DOCKRILL
Reviews Editor DAN GARDINER
Technical Writer NICK MAILATH
Art Director DAVID COLLINS
Graphic Designer TIM PHILLIPSON
Contributing editors JOHN HELVERT, DARREN YATES
Contributing writers KURT BEST, HELEN BRADLEY, DAVID FLYNN, LINK HARRIS, JOHN HEPWORTH, ALEX KIDMAN, ANGUS KIDMAN, GAIL LIPSCOMBE, ASHTON MILLS, PHILIP MOORE, TERRY O'SHANASSY, JULIAN SCHOFFEL, NATHAN TAYLOR, ROSE VINES, JAN WIKSTROM, ROULLA YIACOUMI, PAUL ZUCKER
DVD Producer PHILIP MOORE

ADVERTISING

National Advertising Manager RENÉE RYDER
Account Manager MATTHEW ROGERS
Advertising Coordinator HEATHER CANNONS

CORPORATE

ACP Magazines CEO SCOTT LORSON
PBL Media CEO IAN LAW
Group Publisher PHIL SCOTT
Associate Publisher MICHAEL KOSLOWSKI
Designer-in-Chief ACP Mee's Lifestyle GLEN SMITH
National Sales Director
Men's & Specialist LOUISE BARRETT
Advertising Director ANDREW CODK
Production Controller IAN HENN
Advertising Production GIOVANNA JAVELOSA
Brand Manager AMY McBRIDE

CONTACT US

SUBSCRIPTION SALES AND INQUIRIES
Phone 13 61 16 (Monday to Friday 8am to 6pm EDST)
Email Magshop@magshop.com.au
Web www.magshop.com.au
Mail Magshop, GPO Box 5252, Sydney NSW, 2000
DVD support email pcuserc@acpmagazines.com.au (see full technical support details on the DVD back cover)
EDITORIAL ENQUIRIES
Phone (02) 9288 9111
Email pcuser@acpmagazines.com.au
Fax (02) 9267 4909
ADVERTISING ENQUIRIES
NSW RENÉE RYDER (02) 9288 9145
VIC PETER FLANAGAN (03) 9822 5188
Queensland NDEL FITZPATRICK (07) 3000 8500
South Australia/Western Australia
ARNDUL MEDIA (08) 8379 2444
Advertising material
GIOVANNA JAVELOSA (02) 9282 8337
Postal address PC USER, GPO BOX 4088, SYDNEY, NSW 2001
Street address LEVEL 18, CIVIC TOWER, 66-68 GOULBURN STREET, SYDNEY, NSW 2000
SYNDICATION ENQUIRIES
London JOHN SLATER **Phone** +44 20 7812 6527
Email jslater@acpuk.com
Sydney Email acpsyndication@acpmagazines.com.au **Web** www.pcuser.com.au

Published by ACP Magazines Ltd ABN 18 053 273 546, 54-58 Park Street, Sydney, New South Wales, 2000.
© 2008 All rights reserved. Printed by Webstar – A Division of Blue Star Print Group Australia Pty Limited ABN 58000 205 210, Unit 1, 83 Derby Street, Silverwater, NSW, 2128. Material contained within Australian PC User is protected under the Commonwealth Copyright Act 1968. No material may be reproduced in part or in whole without written consent from the copyright holders. All rights reserved. Subscription rates (surface mail in Australia): one year (12 issues) $79.95, two years (24 issues) $159.90. See page 99 for details.

acp magazines pbiMedia

MiniStation TurboUSB

- Up to 64% Faster than a 4200 RPM USB Hard Drive
- Shock Resistant Design
- Convenient Wrap-Around USB Cable
- Up to 250 GB

» Up to 64,000 raw images!*

TURBO USB

Turbocharged USB Hard Drives

DriveStation TurboUSB

- Up to 37% Faster than a 7200 RPM USB Hard Drive
- Silent, Fanless Design
- Turns On and Off Automatically with your PC
- Up to 1.0 TB

Up to 200,000 raw images!*

Plus:

- Protect your data from unauthorised access with Secure Lock Ware encryption software
- Back up your files automatically with Memeo™ Software

To learn more about Buffalo's Turbocharged USB Hard Drives go to **www.buffalo-asia.com**

Now available at:

harris technology · Sight & Sound · Power House · Tandy · MYER

BUFFALO

Distributed by Uniden®

*Values used for images are approximates based on typical length, compression and resolutions.

letter of the month prize

This month's letter of the month prize winner will receive a Belkin Flip Wireless, valued at $129.95. The Flip allows you to share one monitor, keyboard, and mouse between two computers (notebook or PC) and supports both Mac and PC platforms. Just place the remote anywhere on your desk and press to flip your monitor from one computer to the next.

Turn off DRM

LETTER OF THE MONTH

Sender: **S. Bennett** / Geraldton, WA

With reference to Tom O'Donald's letter ('Microsoft and music', *PC User* February, page 9) regarding Microsoft's copy protection, Tom expresses his dissatisfaction with the copy protection that is placed on music files he currently 'rips' to the hard drive.

This is an additional feature that he as an end user has selected when he first opened up Windows Media Player or upgraded it to a later version. This can be removed in a variety of ways.

One example is to save your audio files in MP3 format. Windows Media Player has this feature under Tools —> Options —> 'Rip Music' —> Format, so set it to MP3. Another option is to disable the Digital Rights Management (DRM) feature by going to Tools —> Options —> 'Rip Music' and unchecking the box 'Copy protect music'.

There is no way to remove the protection on the tracks you have already put onto your hard drive that I know of. DRM is there to prevent piracy and Microsoft is not the only company to have to go to the extremes of copyright protection. If there were more honest people, companies wouldn't have to go to such extremes to protect their copyrighted and intellectual property.

The writer of the best letter to PC User *each month wins a prize. Just send your letter of no more than 300 words to* PC User *(see 'Contact us', page 8), and please include your postal address and daytime telephone number. Entry is open to all residents of Australia other than employees of ACP Magazines. Entries for April close on February 5. The judges' decision is final. All entries become the property of ACP Magazines.*

MISSING THE POINT

Sender: **Nick Dadson** / Launceston, Tas

In the February issue of *PC User* (see page 11), the ASUS Eee PC was given a fairly good mark, but with a stern warning that the shine of such a machine may soon wear off. Elsewhere, publications have been telling people to avoid the machine and to spend just a few dollars more to get a fully-functioning Vista notebook. Why has everyone missed the point of the Eee PC?

Yes, the keyboard is cramped. Yes, the screen is tiny. And yes, it uses a Linux variant. But when you purchase this device, you're not after a weighty, large, Vista fiend. You're after a small, light, highly portable and usable machine. Who wants to lug a 3kg notebook around with them on a daily basis to and from work? On their latest holiday? When visiting family and friends to show some new digital photos? No takers? I wonder why!

The fact is, most people who buy this will already own a desktop PC to carry out the grunt of their computing needs. So, why get a duplicate machine that's going to break your back and shoulders every time?

All anyone really needs when they're on their daily travels is email and internet access, basic media functions and perhaps a word processor. So, come on all you so-called 'techies', get into the spirit of things. The PC world is no longer about total power — it's about what you can do with something, its overall usefulness and how it can benefit you.

APPLE: COMPUTER COMPANY OR FRUIT?

Sender: **George Roussos** / Endeavour Hills, Vic

With the release of Apple's Mac OS X Leopard, the Boot Camp feature is now integrated and working on the software without any problems. While that is good and true for the Mac users who are now able to save thousands from not buying a PC laptop or computer to run Windows, I can't help but think about the Windows users who want the inverse.

I would like to be able to run OS X to dual-boot on my laptop so that I have the best of both worlds at my fingertips, but this isn't so and Apple refuses to allow this to proceed. When the idea of Boot Camp came about, Apple's senior president Philip Schiller said "Apple has no desire or plan to sell or support Windows, but many customers have expressed their interest to run Windows on Apple's superior hardware now that we use Intel processors".

Microsoft has not done anything similar to combat this take on Apple, so we are then forced to download hacks to allow OS X to run on a PC computer, which doesn't help with the ever-increasing problems of piracy and illegal activities.

While I do agree that Apple has great products, it should not have mainstreamed the ability to allow Windows on a Mac if it doesn't want the same thing happening to its software. One must ponder on the future and when Microsoft will awaken and end all this trivial debate with its own Boot Camp ability. This will see an end to the inflated under-performing laptop hardware Apple imposes presently, and then the noble PC will be the true computing center for all platforms of software from Windows, Linux, Unix and OS X effortlessly.

CHANGING NORTON SETTINGS

Sender: **Adam New** / Tarro, NSW

This is in reply to the letter 'Norton takes too long' in the February issue (page 9), with his problems about the Norton 360 application.

Firstly, the reason why Norton 360 is slowing the computer to a halt is due to the system resources available in the notebook. Norton 360 needs a good 256MB of available physical memory to run at its best. If you have 512MB with a few applications running, it will surely make the notebook slower than usual.

Secondly, the reason why the updates take a good amount of time is due to the file size

— it's roughly 23MB. Depending on your internet connection speed, it can take anywhere between 1 minute to 45 minutes.

Also, you don't need to update every hour on the hour, as you can configure Norton 360 to run scans, backups and updates when you want. These can be found in the 'Tasks and Settings' area of the application.

To stop automatic program and virus updates in Norton 360:

1. Open up Norton 360 and click on 'Tasks and settings'.
2. Click on 'Advanced settings' and untick 'Automatic Norton 360 updates'.
3. Click Apply and then Close.
4. Click Close again.
5. Save your work and restart your computer.

If you think updates take too long within the application, you can obtain the virus definitions at http://tinyurl.com/mly.

IMAP ON GMAIL

Sender: **Austin Adams** / Internet

In your internet column on page 85 of the February issue, you explained how to use Gmail's IMAP feature. I tried to use it, but it wasn't there. The Settings option only said 'Forwarding and POP'.

After much searching on the internet, I found that I had to change my language (in Settings —> General) to 'English (US)' from 'English (UK)' before IMAP would show up. Thanks for alerting me to the IMAP possibility. What a US-centric world we live in! Grrr.

IT'S ALL IN THE CABLES

Sender: **David Key** / Brisbane, Qld

I have recently deduced a tip for hardware that I thought others could benefit from.

Not long after installing Vista x64, I bought a small combination three-port USB hub and memory card reader for use with SD, Memory Stick and CF cards. Right from the start, I had problems with the reader and hub dropping out during transfers, or not being recognised at all by Vista or not reading the media cards well at all.

I tried the hub at work on some XP machines and I had the same problem. One day while downloading some photos from my Sony digital camera, I noticed that the Sony cable uses the same connections as the hub/reader and I never have connection trouble with the camera. So, I tried the camera cable on the hub and had no more problems.

It wasn't an operating system or driver problem causing the dropouts and failures for the device. It was the cheap, thin cables that came from the device. It hasn't missed a beat since. It would seem a better cable can make all the difference in the long run, and this principle would apply to a lot of external devices as well. I hope this helps anyone else with the same problems I had.

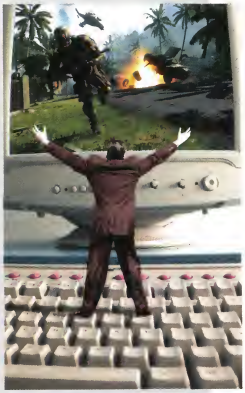
GAME OVER

Sender: **Stephen Fryc** / Beaconsfield, WA

I am a very keen gamer in my 40s who loves to play the PC hardware-intensive first-person shooter games. Put simply, I can't purchase this game genre any longer because I don't have the cash for the continual PC hardware upgrades required.

I realise this topic is old and has been kicked around since way back, when the first 3D graphics card was required for those early games. But I ask you, the reader, if you feel that you can justify a hardware upgrade to play the latest game or are you happy with you computer as it is? Console systems are surely an option for some, but I am really only used to a mouse and keyboard. I own a PSOne, but really prefer my PC for games.

The PC certainly is evolving, but do we need all that muscle power for other uses such as net surfing or word processing? I actually found and recycled my current computer, a Pentium 4, as it was discarded as junk. With a few minor repairs it has been running very well. I guess the only other question I have is what to spend the money on, which was once reserved for my games habit?



WORD'S LANGUAGE QUIRKS

Sender: **Leon Le Leu** / Googong, NSW

Every now and then, Microsoft Word throws up something that makes you wonder about its creators. I have always thought the Australian dictionary for Word was largely tokenism, and I tend to use the UK dictionary because I feel it better reflects actual Australian English.

In a recent document I wrote 'a herbalist'. Even using the UK dictionary, Word was desperately trying to get me to change that to 'an herbalist' (with a silent H). No Englishman I have ever known says 'an herbalist'. On switching to the Australian dictionary, Word was still suggesting 'an herbalist'. No Australian says or writes that unless they have been watching too much American television — 'too much' usually being any US TV. Even most Americans I've met say 'a herbalist'. Why is Microsoft trying to enforce that weird, un-Australian pronunciation?

Just as a check, I tried 'a human', since many Americans grotesquely persist in saying that as 'an yooman'. Fortunately, the Australian and UK versions were united in accepting 'a human'.

So the 'herbalist' exercise is an indicator that the Australian dictionary in Word is mere tokenism or window dressing. There are probably a lot of other glaring examples which I have not yet encountered. Microsoft really needs to lift its game and find out how we actually speak and write.

What's in store for 2008?

Darren Yates takes a look at technologies that could take centre stage during the course of 2008.

Intel's Core 2 Duo keeps on keeping on with new 45-nanometre E8000 series chips now available.

It's often said that a new year can bring new opportunities. As the rapid pace of change in the technology world continues, it's worth taking a breather and looking at what might capture our attention during the course of this year.

_OPERATING SYSTEMS

2008 is being seen as the year Linux becomes a serious contender for the desktop and notebook PC. With Vista continuing to underwhelm many consumers and businesses, all eyes will be on the open source operating system to see how much of a dent it will put in Microsoft's Windows armour.

Reports of Dell selling 40,000 Ubuntu-preloaded PCs account for a minute fraction of the rumoured 40 million PCs Dell moves each year, but with ASUS also including the Xandros version of Linux on its popular Eee PC notebook, consumers are beginning to see Linux appear as an alternative operating system. However, *PC User* has been told that Microsoft is about to sell ASUS a special stripped-down version of its Windows XP Home Edition operating system to replace Linux in the next generation of the Eee PC.

Canonical's popular desktop distro, Ubuntu, is expected to release version 8.04, codenamed Hardy Heron, in April. It will feature a number of improvements, including screen resolution detection handling and improved stability.

Complicating this will be the much-anticipated release of Service Pack 1 for Windows Vista, but whether it fixes the myriad of complaints that have beset Microsoft's latest operating system remains to be seen. With a rumoured Service Pack 3 delivering greater speed for Windows XP, it could well be a case of Windows XP continuing to be the operating system of choice for the bulk of consumers. Early reports are the release candidate of Windows XP SP3 sees Office gain a 10% performance improvement over Windows XP SP2. Microsoft plans to stop selling Windows XP come July 1 this year, so we suggest you get your copy now while you still can.

Ubuntu 8.04, codenamed Hardy Heron. Could it become the most popular Linux distro in 2008?

While Microsoft concentrated on the consumer side of the market in 2007, 2008 will see it aiming for the big end of town when it launches Windows Server 2008, Microsoft SQL Server 2008 and Microsoft Visual Studio 2008 this quarter.

_PROCESSORS

Intel will be releasing some extremely low-power CPUs that will likely help expand the low-cost ultraportable market the ASUS Eee PC has pioneered.

Codenamed Diamondville, the new low-power 45-nanometre (nm) CPUs will focus far more on power consumption than performance. One of the ways these CPUs will help reduce costs will be by being soldered directly to the motherboard, so forget upgrading systems using these chips. However, with chip and notebook vendors eyeing off the developing world as much as trying to create a new low-cost ultraportable market, functionality and cost will reign over performance.

Diamondville will be just one part of the larger Intel objective to get ultraportable computing devices down to iPod-style prices. Diamondville is being classed as a derivative of the upcoming 45nm Silverthorne CPU, which consumes just 2W of power. Combine Silverthorne with a new chipset, codenamed Poulsbo, and you get the next-generation ultramobile PC (UMPC), codenamed Menlow. Menlow-based handhelds could well make the iPhone look prehistoric by adding WiMAX, 802.11n, Bluetooth and GPS into handheld computers using either Linux or Windows operating systems.

At the serious performance end of the market, expect to see the Wolfdale version of the Core 2 Duo range, with clock speeds reaching towards 4GHz on a 1,333MHz frontside bus. These will be the Core 2 Duo E8000 series (we've tested the new E8400 this month on page 21).

A new range of mobile Core 2 Duo processors for notebooks will deliver up to 6MB of L2 cache and clock speeds of up to 2.6GHz for notebooks during the first quarter of 2008.

Intel will also get multicore processing across its entire desktop range when dual-core Celeron chips arrive as early as February

AMD's Phenom processor range needs to overcome its issues before Intel gains too much of a performance lead.

Apple's MacBook Air — one USB port, no Ethernet, but plenty of wireless connectivity options.

Western Digital's new 320GB notebook drive. Expect to see 500GB before the end of the year.

this year. The Celeron E1200 will have a 1.6GHz clock speed, feature 512KB of L2 cache and run on an 800MHz FSB.

AMD's big word for the year is supposed to be Phenom. The company will roll out four-core processors under its new chip family brand, as well as lower-cost three-core CPUs, made possible by the fact that each core acts independently. A company spokesperson recently told *PC User* that it expects to continue producing Athlon 64 X2 dual-core chips to satisfy the entry-level market.

With the aim of placing emphasis on the number of cores rather than clock speed, AMD will try to make a play for the cost-conscious consumer desktop market with well-priced CPUs.

However, the company has struck problems with Phenom, with an error in a section of the chip called the TLB (Translation Lookaside Buffer) that can cause a system to completely lock up under certain processes. A BIOS update can reportedly fix the bug, but at the cost of performance. With quad-core Phenoms already struggling in performance tests due to slow clock speeds (see our processor story in the February issue, page 28), more roadblocks won't do anything to help AMD get out of the hole it's dug for itself.

The company will also be revamping its K8 range of CPUs and delivering more power-efficient models as it brings its Athlon 64 X2 range over to 65nm production. Once Phenom is back on track, AMD will also push its Spider platform — the combination of quad-core Phenom CPU, Radeon HD 3800-series graphics chip and AMD 7-series chipset from the one vendor, aimed directly at the enthusiast/gaming market.

However, we're hearing rumours from at least one partner vendor that AMD may even drop the whole Phenom name and go back to using the Athlon brand. Whichever way you look at it, these are not happy times for AMD.

_MEMORY & STORAGE

The fifth generation of graphics memory, known as GDDR5, will begin appearing in graphics cards this year, with both Samsung and Hynix producing chips during the last quarter of 2007. This latest iteration aims to provide greater bandwidth in combination with reduced power consumption, reported to be as much as 20% over GDDR3 memory. And given the way that graphics cards are sucking on the power cables, every little bit helps.

DDR3 is expected to take over from DDR2 as the de facto standard for PC system memory; however, don't expect the transition to be quick. Given the prices being asked for DDR3, expect to see DDR2 continue to hang around as a current-generation option for new motherboards for most of the year.

The lines will also continue to blur between memory and storage, with Toshiba joining the ranks of solid-state disk (SSD) drives, with capacities of up to 128GB on offer this year. The drives will come in 1.8in and 2.5in form factors beginning in May although one thing they won't be is cheap.

For the rest of us, standard hard disk drives will continue to go up in capacity and down in price. The rumour mills are working overtime that 1,500GB and possibly 2,000GB hard drives will arrive this year. Word is that Samsung is planning a SpinPoint F2 series, with up to 1,500GB on three platters due some time in 2008.

According to US-based researchers Coughlin & Associates, as many as 544 million hard drives could be sold during 2008, with an estimated 34% going into consumer electronic devices.

Western Digital has already pushed 2.5in notebook hard drives to 320GB, and you can expect 500GB before the end of the year. USB flash memory drives will also continue to expand in capacity, with 32GB models expected to arrive in greater numbers during the course of 2008.

_WIRELESS TECHNOLOGY

You're going to hear plenty about wireless in 2008 in all its forms. For starters, despite the fact that we're already seeing products based on a specification that hasn't been ratified yet, the wireless standard 802.11n will be completed this year, offering theoretical speeds of upwards of 260Mbps. Of course, in practice, we'll be lucky to see a hint of that.

There are also big developments in store for universal serial bus (USB). First up, Wireless USB should arrive this year, delivering speeds of 480Mbps up to a distance of 3m, dropping to 110Mbps at a distance of 10m. You'll see a raft of wireless printers and peripherals, including digital cameras, all aiming to do away with the USB cable.

However, the USB cable will stick around for a while yet in the form of USB 3.0. To be called SuperSpeed USB, the new interface aims to deliver up to 4,800Mbps transfer speeds and will target storage devices, with the aim of making it easier to transfer large files such as HD movies. It will be backward-compatible with USB 2.0; however, we hope USB 3.0 won't suffer with the Low-, Full- and Hi-Speed labels that confused consumers when USB 2.0 first arrived. USB 3.0 will use both copper and optical connections to obtain its high speeds.

It's also likely to be the final nail in the coffin for FireWire (IEEE 1394). While a new

FireWire standard called S3200 is on the way with plans to deliver 3,200Mbps data transfer speeds using the same basic technology as standard 400/800Mbps FireWire, few devices today even offer the 800Mbps speeds. However, S3200 is a standard in two parts, which also includes high-speed 800Mbps data transfer over standard Cat-5e network cable for distances of up to 100m. It remains to be seen whether any products will adopt this standard instead of USB 3.0, which is likely to be more popular.

Finally, the other wireless technology to see some significant changes in Australia towards the end of the year will be the biggest change to commercial radio broadcasting since it began in 1932, as the Federal Government introduces digital broadcasting on January 1, 2009.

Test transmissions of the new DAB+ (Digital Audio Broadcasting 'plus') began in July 2007, and digital receivers, including a rumoured plug-in to allow iPods to receive digital broadcasts, are expected to arrive in time for the start of 2009. DAB+ is based on the 'plus' version of AAC (Advanced Audio Codec) used by Apple's iPods. It's also said to deliver improved reception reliability and stability, thanks to added error-correction code, similar to that used in audio CDs.

Expect to see more uses for flash memory, including HD video capture!

Apple's iPhone may arrive by the end of the year. Let's hope we get a 3G version.

_BATTERIES

Japanese electronics giant Toshiba will bring to market what it calls the 'Super Charge ion Battery' or SCiB. The new battery technology claims to charge to 90% of capacity in just 5 minutes, but last for up to 10 years if charged and discharged once per day.

Toshiba will launch the batteries in March this year, although it is expected the technology will be used in the hybrid car market first. Whether or not SCiB will ever make it to more portable and personal devices remains to be seen. However, many power source innovations start in the industrial sector and move down the food chain to consumers, so it'll be a case of 'watch this space'.

What will reach consumers is the launch of what is said to be the world's longest-lasting alkaline battery from Panasonic. Called the Evolta range, the AA and AAA cells offer 20% more power than anything Eveready can deliver with its Energizer range. They'll also have a 10-year shelf life.

On the mobile computing front, it now seems conventional Lithium Ion battery technology and improved power efficiency have re-established themselves as the future here. The once-common claims of fuel cells delivering 20 hours-plus running time appear to have all but evaporated.

_APPLE

The iconic brand is likely to have a big 2008, at least in Australia, having launched its new MacBook Air, a 2cm thick ultraportable notebook. However, word on the street is don't expect the much-anticipated and much-hyped iPhone to arrive here (at least officially) any time soon. Hopefully, the version that does eventually land will be an updated 3G version and not the slow 2.5G model that underwhelmed a decent number of US iPhone buyers.

Rumours are that there will be two revisions of the iPhone in 2008 — one said to be a major revamp — although at this stage there is no word on which version Australia will get. The Apple TV will also get a refresh, with larger hard drive capacity and an LCD display rumoured to be in the mix.

_PORTABLE ENTERTAINMENT

It could well be that 2008 becomes the year that digital rights management finally dies of natural causes. With Apple, EMI and Amazon.com all teaming up in their own way to offer DRM-free music, we might finally see the record industry realise that the sky won't fall if consumers get their hands on DRM-free music downloads.

The industry will no doubt continue to bang on about millions in lost sales due to piracy, but it'd be nice if they followed that with how much their profits have increased over the year due to the demand in downloaded music sales.

Apple will continue to dominate music player sales, but is unlikely to tinker much with the current iPod lineup for most of 2008, apart from possible storage capacity increases. Rumours are that orders from Apple for flash memory are below expectation, so not only does that likely mean no new iPods, but it also means cheap flash memory during the first half of 2008. You beauty!

But that doesn't mean there won't be action in this market — SanDisk has already announced a 16GB flash-based MP3/MP4 player. It's likely that 32GB models will arrive by year's end, possibly from Apple, but equally as likely from SanDisk.

SecureDigital-High Capacity (SDHC) and microSDHC will see the good times roll with capacities possibly reaching 64GB and 24GB, respectively, by the year's end. SanDisk recently announced a new range of video-speed SDHC cards aimed at what will be a growing range of high-definition video cameras that capture straight to flash memory. The SanDisk Video HD range currently tops out at 8GB (enough for two hours of video), but expect that to continue to rise during the year.

TEST BENCH

Big is beautiful

The ***PC User* team** tests the latest hardware and software, starting with Dell's beastly new 30in LCD monitor.

DELL 3008WFP ULTRASHARP

PRICE $2,299 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

Dell's now-discontinued 3007WFP was a huge 30in LCD that offered decent picture quality, but had one major flaw: it only had a single DVI input, so it was only really usable as a PC display. By contrast, its replacement, the 3008WFP, almost overcompensates in this area; it has the largest variety of digital and analogue inputs we've seen on any display, including two DVI, VGA, HDMI, component, DisplayPort (a new competitor to HDMI), S-Video and composite. This means you can hook up pretty much any video or gaming device you can think of. The overall design is pretty understated — the dark grey burnished-metal frame keeps the focus on the screen, not the housing. It's also good specs-wise, with a 3,000:1 contrast ratio and 8ms response time. The huge screen size means you have to sit back a few metres to see it all, so using larger fonts and icons in Windows really is a must. Reflected light on the screen's matte finish can also cause a white, smoky effect, which impedes viewing — it needs to be carefully positioned for optimal viewing. The 3008WFP's native resolution is a massive 2,560 x 1,600 pixels; thankfully it scales lower resolutions quite nicely with minimal pixel distortion, though when outputting a PC desktop there is a clear difference between using native resolution and the next step down (1,920 x 1,200). It's workable, but the picture is obviously not as sharp. From a colour standpoint it's also great: the hues are very natural on the whole and there was no ghosting; the only real issue was some minimal colour banding. The display also works fine for gaming, although we couldn't get our Xbox 360 to sync properly over VGA at 1080p — a large portion of the image was cut off. Lower resolutions displayed perfectly, and it worked adequately over component at 1080p. We'd consider HDMI the best input choice for game consoles.

— Dan Gardiner

PC User says: A highly versatile screen with great image quality and heaps of inputs.

_UP & COMING

USB 3.0

SuperSpeed USB 3.0 is on its way — we should reportedly see products using it in 2009 — and, with a tenfold bandwidth increase to 4.8Gbps, it's set to make data transfers a lot quicker. It'll be backwards compatible with both the previous standards, thanks to use of the same connectors. The 3.0 connectors will have additional pins to cater for the extra throughput, though they won't interfere with connections from older devices. The specification is being developed by the USB 3.0 promoter group, which includes Intel, HP, Microsoft, NEC, NXP and Texas Instruments. A final specification is expected later this year . . . now all we need are devices that can use all that bandwidth!

TP-LINK TD-W8920G ADSL2+ ROUTER

PRICE $90 / **CONTACT** ANYWARE COMPUTER ACCESSORIES
PHONE 1300 269 927 / **WEB** www.tp-link.com

When you're shopping for an ADSL router, it's usually a good idea to steer clear of the cheapest options: they're often lacking in features and you may find they won't do everything you need. The TD-W8920G may just be the exception to that rule, though — it's one of the least expensive routers around, yet it still packs in all the basic features and even does some things better than its more expensive counterparts. It synced at top speeds on our test ADSL2+ connection (24,308/1,303Kbps downstream/upstream, respectively) and all the basic features, such as Port Forwarding, worked perfectly in our testing. Surprisingly, Universal Plug 'n' Play also worked fine (this feature allows network devices and apps to automatically change router settings based on their needs). We tested it with both uTorrent and Xbox LIVE, and both connected flawlessly. TP-LINK has even included an ADSL line splitter/filter in the pack. Though there's no SPI firewall (meaning it can't directly detect and shut down attacks) and no VPN support, most home users will get by fine without these. (Security-wise, you're still protected by a basic Network Address Translation firewall.) Our only real gripe with the TD-W8920G is that the initial setup was a little problematic — we had to manually change many of the settings to get our connection working, something that first-time users may not be capable of doing on their own. The wireless signal strength was also very good — it's not the strongest we've tested, but it easily covered our testing area.

— Dan Gardiner

PC User says: **Despite some initial setup issues, this is a full-featured, good-quality router at an unbeatable price.**

POCKETSURFER 2

PRICE $399 / **CONTACT** DATAWIND / **PHONE** (02) 8915 6230
WEB www.pocketsurfer.com.au

The PocketSurfer 2 is a slender fliptop device with a flat keyboard that offers 'free' web surfing over a GPRS connection. It's a decent idea in theory, but one that falls dead flat in actual operation. On the physical side, the keyboard is too flat and too unresponsive for our liking, and the 640 x 240 VGA screen is a blurry low-resolution mess. The GPRS connection is accelerated by the host company DataWind caching pages, but it cheats somewhat by caching only parts of pages as you go. As such, even the smallest pages tend to involve multiple loads, unless you're checking very popular pages that the host server happens to have cached. Finally, the 'free' moniker only applies for 20 hours per month. That's not even an hour a day and even then, that's only for the first year, after which you'll have to pay $50 a year for continued access.

— Alex Kidman

PC User says: **Suffers from mediocre hardware, web page loading issues and only 20 hours per month of access.**

CORSAIR FLASH PADLOCK 2GB

PRICE $50 / **CONTACT** ALTECH COMPUTERS / **PHONE** (02) 8831 9999 / **WEB** www.corsair.com

The Flash Padlock is a USB thumb drive that takes a unique approach to data security: it requires you to physically unlock the drive in order to use it. This is done by entering a pre-programmed numeric code via the numbered buttons on the side of the drive. Programming the security code, which can be up to 10 digits, is straightforward and only takes a few minutes. You can even register your code on the Corsair web site so it can be securely retrieved if you forget it. There are two small LEDs that indicate the current status of the drive: locked or unlocked. To unlock the drive you press the key symbol and enter you code, after which the green unlock light should flash. You can then plug it into the computer and use it normally. Once removed, the key will automatically lock after 15 seconds. The drive handled data tests with ease, showing a random access time of 1.4ms and average read speed of 34.8MB/s. Write speed was a slower at just under 10MB/s, but it's certainly no slouch. One problem is that the physical size of the drive can make it a bit of a squeeze to fit alongside other USB devices. The only other issue was the protective cap became a little loose after a while and could easily be misplaced.

— Nick Mailath

PC User says: **Ideal if you need security for your data.**

When you purchase an LG LCD monitor, you're buying state of the art picture quality. In fact, we're so confident in our superior quality standards that we've introduced a 3 year "perfect pixel" replacement warranty. Perfect Pixel warranty is available on most LG LCD monitors providing you up to 3 years replacement warranty on dead pixels, giving you even more confidence when you choose LG. For more information visit www.lge.com.au

LG
Life's Good

BORIS CONTINUUM COMPLETE 5

PRICE $1,298 / **CONTACT** ADIMEX / **PHONE** (02) 9906 4556 / **WEB** www.borisfx.com

Boris makes some of the best visual effects video editing plug-ins around, and the Continuum Complete set is its top-of-the-range product, with support for Premiere, After Effects, Combustion, Avid, Final Cut Pro, plus other high-end tools, but not Sony Vegas. There are nine new categories in this release, each with dozens of new effects. Highlights include the new UpRez filter, which upscales SD footage to fit an HD-resolution timeline (using image sampling to make the enlarged footage look as good as possible) and the Pan and Zoom filter, which adds movement to still image presentations. There's also the Matchmove Filter, which locks the movements of one clip to another for advanced motion-tracking features directly within a video editor like Premiere Pro. Other new filters create 'bad TV' and other noise and distortion effects. There are advanced matte, lighting, text, transitions and colour manipulation effects, plus generators to create instant animating textures and backdrops. There are around 180 effects in all. Many of these use OpenGL for processing on your graphics card (rather than the CPU), so can be previewed in real time while freeing up the CPU for other tasks.

— Philip Moore

PC User says: Essential for any motion graphics professional.

NERO 8

PRICE $150 / **CONTACT** COMMUNIQUE / **PHONE** (02) 9622 5624 / **WEB** www.nero.com

Long regarded as one of the leading disc burning applications, Nero has for some years been spreading its wings, aiming to be your all-in-one digital media suite. Aside from the core burning application, it comes with a WAV editor, video editor, DVD authoring, cover and label designer, image editor and viewer, media player, plus backup and copy utilities. The SmartStart home page is more functional and the new RescueAgent offers data recovery for damaged discs. There's no guarantee it will work, but it's a good place to start. Existing apps have been updated and improved, with added support for HD video editing and Blu-ray and HD-DVD discs. There are also improvements to the Nero Home front end, which is designed to be the core of any Windows Media Center PC, and several conveniences that integrate Nero's tools with Windows Vista. Uploading content to popular sites like MySpace and YouTube can be done directly, as can viewing and downloading clips from these sites, though this wasn't as easy to work with as it should have been. All up, while there are some welcome improvements, there is nothing revolutionary in this new edition and many people won't see the need to upgrade.

— Philip Moore

PC User says: A great set of tools, but this upgrade isn't really revolutionary.

NEWTEK SPEEDEDIT 1.5

PRICE $799 / **CONTACT** NEW MAGIC / **PHONE** (02) 9528 4555 / **WEB** www.newtek.com/speededit

Last time we reviewed this program, we were impressed by how fast and intuitive it was. SpeedEdit lets you mix different video formats and resolutions on the same timeline, rendering in real time, and has many other advanced tools like chroma key, colour correction and envelope controls for just about everything. What it lacked was audio effects (though there is EQ), video filters and transitions, and other such bells and whistles. Version 1.2 added support for DVCPro HD (.mxf) format files, timecode burn-in, better crossfading of clips and several other welcome features. It also added VST audio plug-in support. This latest release, version 1.5, continues to fix workflow/productivity issues and adds more to enhance the program's strong core. Two visual effects are now included: black-and-white and sepia tones. They're simple and effective. Additionally, presets for VST audio plug-ins can now be saved and stored; the program further improves the rendering and output options for your final project; and there's a rather clever AVI wrapper so you can import your SpeedEdit project into another application without having to render it first. The foundations established in version 1 were powerful and fast, and little by little NewTek is adding what we've come to expect in a mature video editing program. Give it a couple more versions and it will really give the market leaders a run for their money.

— Philip Moore

PC User says: Still the fastest editor around. By version 3 this should be a killer app.

Databases for everyone

Rose Vines reviews the latest database programs.

It's a good year to buy a database. Microsoft has given Access a long overdue makeover; FileMaker and Alpha Software have been working hard on the soft spots in their offerings, and OpenOffice.org has added a worthwhile database component to its free office suite.

While it's good to see fresh versions of Access, FileMaker and Alpha Five, what's really welcome is the fact that databases have finally matured. When you buy a database, don't start by making a product comparison. Instead, think carefully about your data management needs and the resources — time, experience, staff — you have at hand.

If your needs are modest, you'll find that any one of the major database applications is perfectly capable of doing the job for you. Which one you should buy will depend on your resources.

_BETTER ALL ROUND

Database companies have been hard at work fixing the weaknesses in their products.

FileMaker Pro 9 is more powerful than its predecessors, with improved scripting, conditional formatting and SQL support.

Alpha Five, which has suffered from an interface harking back to the last century, has had a major overhaul in version 8. Not only does it look more stylish, it now comes replete with a set of design tools, including palettes and interchangeable style sheets, to help you create better-looking applications.

Access 2007 has opened its arms to less experienced users with a well thought-out redesign, a plethora of application templates and a table templates feature: tables you can drop into any application you design.

OpenOffice.org Base has nowhere near the sophistication and ease of use of its commercial rivals, but it does provide native support for the age-old dBase (.dbf) plus the ability to connect to a host of external data sources, including Microsoft Access and SQL databases.

_STRENGTHS & WEAKNESSES

Despite the improvements in each of the database applications, each still has its weaknesses and each stands out from its peers in certain areas.

As well as being the style leader, FileMaker is incomparably simple to use. It gets you up and running with a minimum of fuss via the Quick Start Screen and Learning Center. FileMaker offers tools for developers, too, including scripting, web publishing, cross-platform support and secure one- or two-way SQL connections. But it lacks the extensive programming tools and heavy-duty processing power you'll find in Alpha Five and Access. For example, it performs all SQL processing — such as record sorting — on the client instead of the server. The result is reduced performance in SQL operations.

Although Microsoft has made Access 2007 more appealing with its uncluttered interface and extensive templates, it's still essentially a developer's tool. It's easy to get out of your depth fairly quickly if you lack experience, but if you have the experience, it's hard to test the limits of what you can accomplish with it.

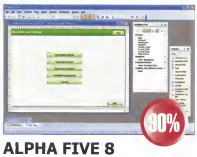
Alpha Five 8 does a really good job of straddling the middle ground. It doesn't have FileMaker's simplicity but it does a huge amount of heavy lifting without much effort on your part. Its step-by-step genies, Xdialog dialog creator and plug-in web components let you create sophisticated applications without the need to write code.

OpenOffice.org Base looks a little like a cut-down version of Access 2003, with wizards for creating tables, forms, queries and reports, and a drag-and-drop relational design window. It doesn't offer much in the way of functions or scripting and it's buggy. However, if you already have experience with creating databases, you'll be able to put it to good use.

_WHICH ONE?

If databases were about style and simplicity, you'd buy FileMaker. If databases were all about power, you'd buy a copy of Access. If databases were about balance, you'd buy Alpha Five. If they were about open formats, you'd download OpenOffice.org Base.

For most home and small office applications, you won't go wrong with either FileMaker or Alpha Five. FileMaker offers the easier entrance; although Alpha Five is unbeatable value.

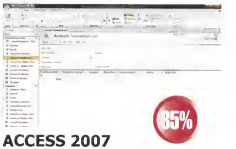


ALPHA FIVE 8

PRICE DESKTOP, US$199; PROFESSIONAL, US$249; ENTERPRISE, US$349
WEB www.alphasoftware.com

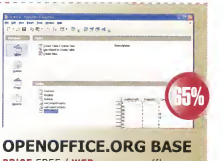
FILEMAKER PRO 9

PRICE PRO, $489; PRO ADVANCED, $800 / **CONTACT** FILEMAKER
PHONE 1800 028 316
WEB www.filemaker.com.au



ACCESS 2007

PRICE $359; BUNDLED IN OFFICE PROFESSIONAL
CONTACT MICROSOFT / **PHONE** 13 20 58
WEB www.microsoft.com.au



OPENOFFICE.ORG BASE

PRICE FREE / **WEB** www.openoffice.org

Terabyte face-off

The ***PC User*** **team** tests the latest upgrade components, including three 1TB drives and a new Intel X48-chipset motherboard.

SAMSUNG SPINPOINT F1 HD103UJ

PRICE $375
CONTACT ALTECH COMPUTERS
PHONE (02) 8831 9999
WEB www.samsung.com.au

Though terabyte drives aren't quite the best-value units yet (500GB drives are slightly better on a cost per GB basis), they're an excellent option if you need masses of storage. Samsung's SpinPoint series has dominated our drive tests over the last two years, and this 1TB model more than lives up to the family name; it's one of the fastest 7,200rpm SATA drives we've tested and sells online for a reasonable $375. Its idle temperature of just 22°C (25°C under load) in our test machine was also unmatched, and although it wasn't the quietest, its acoustics are still very respectable. It was considerably faster in almost every test we performed, both theoretical and real world. If you need a high-capacity drive, this would be our first choice.

— Dan Gardiner

PC User says: Gets almost everything right: speedy, cool and comparatively inexpensive.

WESTERN DIGITAL CAVIAR GP WD10EACS

PRICE $380 / **WEB** www.wdc.com

Western Digital is billing its new Green Power drives as the most environmentally-friendly available, with markedly lower power consumption. We're still setting up our power testing rig, so we were unable to test this first hand, but the company claims this one is around 6% more efficient than the Samsung model when reading or writing (7.5W compared to 7.9W); however, more critically, it uses around half the power when idle (4W versus 7.7W). The great power stats have come at the price of performance, although it's not as bad as you might think. Despite being trounced in HD Tach's throughput tests (where it was up to 30% slower than the Samsung) the high burst speed helped bridge the gap somewhat in real-world tests. It still wasn't the fastest, but it often wasn't too far behind the Seagate. The other great feature here is acoustics. It's one of the quietest drives around at only 25/27dB (idle/seek), which means it's ideal for media PC use. It still runs hotter than the Samsung, being about on par with the Seagate. We have to commend Western Digital for taking a more environmentally-aware stance, although we'd still be a little hesitant to use this drive for high-performance tasks.

— Dan Gardiner

PC User says: A little slower, but this one has great power stats.

SEAGATE BARRACUDA 7200.11 ST31000340AS

PRICE $430
WEB www.seagate.com

Seagate's 1TB drive is a decent unit, but it's considerably dearer than the other two. It had pretty respectable read and write performance in our testing, but its lower burst speed cost it points in some of our real-world benchmarks. The Seagate and Samsung offerings are essentially identical in acoustics — suitable for media centre PCs. The ST31000340AS's most significant point of difference is price — at $430, it's around $50 more than either of the others here. But, that extra cost does buy you an extended warranty (five years versus three years), which many will find a pretty decent trade-off.

— Dan Gardiner

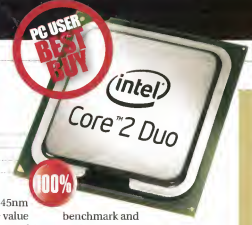
PC User says: A respectable unit with decent performance.

1TB HARD DRIVES: HOW THEY COMPARE

Model	Samsung HD103UJ	Seagate ST31000340AS	Western Digital WD10EACS
Interface/cache	SATA II/32MB	SATA II/32MB	SATA II/16MB
Legacy power socket	No	No	No
Warranty	3 years	5 years	3 years
HD Tach 3.0.4.0			
Random access time (ms)	13.7	12.7	14.7
CPU utilisation (+/-2%)	3%	3%	2%
Burst speed (MB/s)	245	134.4	223
Average read (MB/s)	96.4	85.7	85.7
Average write (MB/s)	94.2	84.9	85.4
UserBench Image 2006 (miautes:seconds)*	9:12	9:46	9:38
UserBench Security 2007 (miautes:seconds)	2:46	3:14	3:17
Half-Life 2 level load time (miautes:seconds)	0:25.5	0:31.3	0:32.2
Noise level (idle/random seek, from manufacturer)	27/29dB	27/29dB	25/27dB
Temperature °C (idle/max.)	22/26	25/31	26/30

INTEL CORE 2 DUO E8400

PRICE $270
CONTACT INTEL
PHONE 1300 363 018
WEB www.intel.com.au



Judging from this chip, Intel's new mainstream 45nm CPUs are set to redefine value desktops. The E8400 is part of the new E8000 series, clocking in at a cool 3GHz with a 1,333MHz frontside bus (FSB) speed and a nice 6MB L2 cache complement. What's amazing about this new chip is that it's hit the market at a street price of around $270, or even lower if you shop around. By comparison, the E6850 still typically sells for around $330. In our testing the E8400 is a real winner, scoring over 41 on our UserBench Encode 2008 benchmark and pushing *Crysis* to 54fps on a 512MB Galaxy GeForce 8800 GT graphics card. We tested it in a Gigabyte GA-P35-DS3P motherboard with no problems at all. The other interesting thing is that the E8400 runs a lot cooler than the E6850, as the bundled heatsink is only 2cm high and has no copper in it at all. For a cracker of a PC under $1,500, we'd start with this CPU.

— Darren Yates

PC User says: Simply brilliant.

GIGABYTE GA-X48-DQ6

PRICE $429
CONTACT RECTRON
PHONE (03) 8545 2833
WEB www.giga-byte.com.au

We tested Gigabyte's high-end X48 with Intel's Core 2 Quad Extreme QX9650 processor and, although its performance was good, the UserBench Encode 2008 score of 47.4 is about on par with what we saw during last month's upgrade superguide. It's well-stocked with heatpipes, although we've seen plenty of others with this much bling. The DQ6 does away with legacy peripheral ports, with eight USB 2.0 and two FireWire ports on the backplate alone, so you shouldn't have any shortage of options. The dual PCI-E x16 lanes only support ATI's CrossFire multi-card setup only (there's still no SLI). Intel's ICH9R and Gigabyte's own RAID controller give you multiple RAID options; but, you can already find this on Gigabyte's own GA-P35-DS3P, which sells for around $180.

— Darren Yates

PC User says: Not cheap, and no performance benefits (yet).

MOTHERBOARDS AND CPUs: HOW THEY COMPARE

	Motherboards		CPUs	
Component tested	**Gigabyte GA-X48-DQ6**	**Gigabyte GA-P35C-DS3R (reference only)**	**Intel Core 2 Duo E8400 (3GHz) CPU**	**Intel Core 2 Duo E6850 (reference only)**
TEST SYSTEM				
Processor/motherboard	Intel Core 2 Quad Extreme QX9650 CPU	Intel Core 2 Quad Extreme QX9650 CPU	Gigabyte GA-P35-DS3P motherboard	Gigabyte GA-P35C-DS3R
Memory	1GB DDR2-1066	1GB DDR2-1066	2GB DDR2-800	2GB DDR2-1066
Motherboard chipsnt	Intel X48 Express	Intel P35 Express	Intel P35 Express	Intel P35 Express
Graphics card	ASUS EN8800GT 1GB	ASUS EN8800GT	Galaxy GeForce 8800 GT 512MB	ASUS EN8800GT 512MB
Operating system	Windows XP Professional SP2	Windows XP Professional SP2	Windows XP Professional SP2	Windows XP Professional SP2
TEST RESULTS				
UserBench Encode 2008 (score)	47.42	45.05	41.45	39.08
- Audio component score	30.6	30.09	30.61	29.06
- Audio time/rate (minutes: seconds/MB/s)	1:33/6.97	1:38/6.61	1:33/6.97	1:36/6.62
- Video component score	79.85	76.02	56.14	52.45
- Video time/rate (minutes: seconds/fps)	0:48/154.76	0:50/147.33	1:08/108.81	1:13/101.66
UserBench Image 2006 (minutns: seconds)	2:36	2:59	2:24	2:36
UserBench Security VR 2007 (minutes:seconds)	2:53	3:24	2:18	2:34
UserBench Crysis 2008				
- 1,024 x 768 (average fps)	55.71	42.6	54.29	52.9
- 1,440 x 900 (avernge fps)	38.83	29.46	N/A	37.81
- 1,680 x 1,050 (avernge fps)	30.5	N/A	N/A	N/A
UserBench UT3Demo 2008				
- 1,024 x 768 (nverage fps)	208.36	N/A	175.37	190.7
- 1,440 x 900 (average fps)	138.98	N/A	N/A	N/A
- 1,680 x 1,050 (average fps)	112.32	N/A	N/A	N/A
- 1,920 x 1,200 (average fps)	85.81	N/A	N/A	N/A
UserBench HL2LC 2008				
- 1,024 x 768 (average fps)	137.9	131.5	134.1	126.6
- 1,440 x 900 (nverage fps)	120.6	114.1	N/A	N/A
- 1,680 x 1,050 (avernge fps)	97.9	N/A	N/A	N/A
- 1,920 x 1,200 (average fps)	81.3	N/A	N/A	N/A

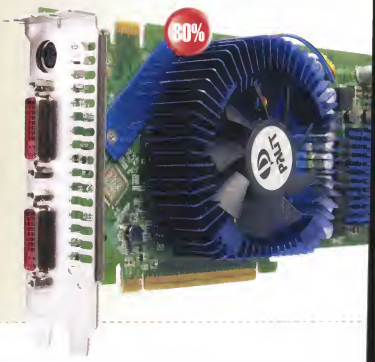
PALIT 8800GT SONIC

PRICE $355 / **CONTACT** ALTECH COMPUTERS / **PHONE** (02) 8831 9999 / **WEB** www.palit.biz/en/

Selling for what will likely be $100 or so less than the ASUS card below, this overclocked Palit is much better value in contrast. It outpaced the ASUS across all our tests, just failing to crack the 60fps barrier on *Crysis* at 1,024 x 768 pixels with high-quality settings — not an insignificant feat in itself. It uses a proprietary heatsink/fan combo that pushes the card to a double-slot width. It's clocked at a 650/950MHz core/memory rate, which typically adds around 10fps at resolutions below 1,440 x 900 pixels and 6-8fps above that when compared with the ASUS card. And that's all with only 512MB of memory. However, at 1,680 x 1,050 pixels on *Crysis*, this card is only 2fps faster (32.58fps compared to 30.5fps), although that probably says more about *Crysis* than these cards. The $355 price tag is from the likes of SkyComp (**www.skycomp.com.au**) and Mwave (**www.mwave.com.au**) and, although it's still early days, this should be roughly the best price. That said, the cheapest 512MB 8800 GT sells for around the $330 mark, so the price here is quite good, which isn't something we often say about an overclocked performance card. Still, with a raft of 256MB 8800 GT cards starting to appear at around $290, it will be interesting to see just how the value/performance balance shifts.

— Darren Yates

PC User says: Good value for an overclocked card.



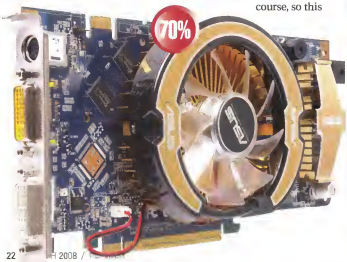
ASUS EN8800GT 1GB

PRICE $475 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The GeForce 8800 GT graphics chip has rewritten the rules for value performance graphics cards, although vendors have recently started releasing versions with a hefty 1GB of onboard memory, such as this EN8800GT. It's a double-slot width design with a high-profile heatsink/fan, but it runs the standard 600/900MHz core/memory clocks for a GeForce 8800 GT. We cranked this one up on the GA-X48-DQ6 motherboard with a Core 2 Quad Extreme QX9650 just to see if the extra memory made a difference. The bottom line is it probably adds a percent or two extra speed, but as you can see from the Palit card, ramping up the GPU clock speed makes far more difference. For a GeForce 8800 GT, hitting 55fps on *Crysis* at 1,024 x 768 pixels with high-quality settings is par for the course, so this one's higher-resolution results were just average. And given this card isn't likely to sell for much under $450, it's a pricey exercise going for that extra memory.

— Darren Yates

PC User says: Delivers nothing more than its 512MB siblings.

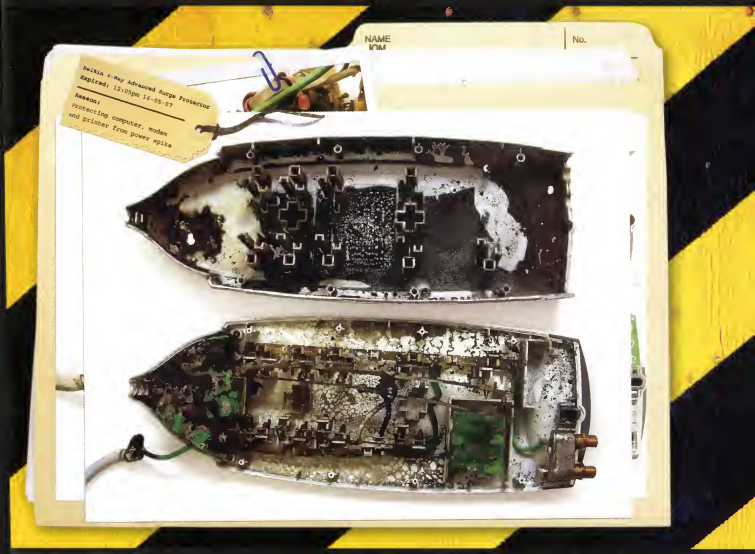


GRAPHICS CARDS: HOW THEY PERFORM

Graphics card	ASUS EN8800GT 1GB	Palit 8800GT Sonic
GPU	Nvidia GeForce 8800 GT	Nvidia GeForce 8800 GT
Core/memory clock (MHz)	600/900	650/950
Memory	1GB DDR3	512MB DDR3
Stream processors	112	112
Driver software version	169.21	169.21
TEST RESULTS		
UserBench Crysis 2008		
- 1,024 x 768 (average fps)	55.71	59.13
- 1,440 x 900 (average fps)	38.83	41.59
- 1,680 x 1,050 (average fps)	30.5	32.58
UserBench UT3Demo 2008		
- 1,024 x 768 (average fps)	208.36	218.28
- 1,440 x 900 (average fps)	138.98	148.35
- 1,680 x 1,050 (average fps)	112.32	119.95
- 1,920 x 1,200 (average fps)	85.81	91.73
UserBench HL2LC 2008		
- 1,024 x 768 (average fps)	137.9	141.1
- 1,440 x 900 (average fps)	120.6	129.1
- 1,680 x 1,050 (average fps)	97.9	105.9
- 1,920 x 1,200 (average fps)	81.3	88.2

Tested on Gigabyte GA-X48-DQ6 motherboard with an Intel Core 2 Quad Extreme QX9650 processor, 1GB DDR2-1066 memory and Windows XP Pro SP2 32-bit.

THIS BELKIN SURGE PROTECTOR PAID THE ULTIMATE PRICE



ALL IN A DAYS WORK!

Protect your valuable equipment from power surges with a Belkin surge protector. Now with over 50 million customers worldwide, Belkin surge protection products offer a free lifetime insurance policy against damage.

Belkin's range of surge protection products will take the force of the blow, so your electrical equipment doesn't.

The Belkin Surge Protection Range
now available from these leading retailers

BELKIN®

www.belkin.com/anz

Harvey Norman · RETRAVISION · Officeworks · DOMAYNE · JB HI-FI · CLIVE ANTHONYS THE HOME OF DISCOUNTS

2008 notebook mega test

30 NOTEBOOKS TESTED

PC USER BEST BUY

Darren Yates rounds up and tests 30 notebooks of all shapes and sizes from $600 to $3,500.

Notebooks these days come in all shapes and sizes, but they have one thing in common: lower prices than we've ever seen before. We tested 30 models ranging from $600 to $3,500 and found some interesting facts. First, if you want the best value, look in the price range where the competition is fiercest — the sub-$1,500 retail market. If you're looking for performance, features and value, models under $1,500 and those in the sub-$2,500 category stood out clearly. And definitely beware of ultraportable notebooks up around the $3,000-$3,500 mark. Getting decent performance and battery life here seems virtually impossible. Despite the dramas with high-priced ultraportables, there are some fantastic models in the lower price ranges that deliver brilliantly on the must-have basics of performance, battery life, storage and weight. You can read on page 7 about the benchmarks we used to test these notebooks, including our brand-new benchmark released this month for this feature: UserBench Battery 2008.

_NOTEBOOKS UNDER $1,000

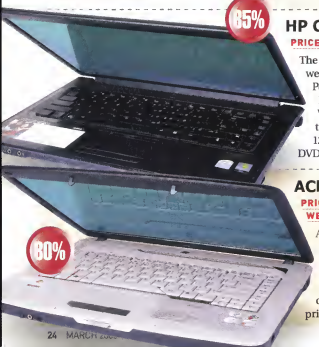
TOSHIBA SATELLITE A200

PRICE $999 AFTER $100 CASHBACK
CONTACT TOSHIBA
PHONE 13 30 70
WEB www.isd.toshiba.com.au

95%

We may have only received three models in this category but it's the hottest category in the market, with discount stores selling sub-$1,000 notebooks everywhere. Of the three, this Satellite A200 topped the charts with the best performance, features and battery life. It features Intel's Pentium Dual-Core T2130 processor clocking at 1.86GHz and 1GB of memory, enough to get Windows Vista Home Basic running at a decent speed. That showed up with a UserBench Encode 2008 score of 19.2, well ahead of the HP and Acer models. The test time from our UserBench Battery 2008 benchmark of a tick over 2 hours was also the best in this group, thanks to a decent 4,000mAh battery. The 120GB Hitachi hard drive is as good as you'll find and the Samsung DVD burner gives you full optical disc access. None of these sub-$1,000 notebooks could handle 3D gaming, but with built-in S-Video output, Wi-Fi, flash card reader and the only model of the three with FireWire, you're not going to miss out on much here.

PC User says: The best notebook that you'll find under $1,000.



95%

HP COMPAQ PRESARIO C719TU

PRICE $949 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

The C719TU is the cheapest HP notebook we've seen and it's not a bad unit. Intel's Pentium Dual-Core T2310 running at 1.46GHz plus 1GB of memory keep Windows Vista Home Basic out of trouble. It has decent storage, with a 120GB Hitachi hard drive and Optiarc DVD burner. The slower clock speed tells in all tests, however, despite a larger battery than the Toshiba. The battery life was just fractionally lower at 1 hour 54 minutes on UserBench Battery 2008. It's really only the processor that separates this from the Toshiba, but you're saving $50 here as well.

PC User says: It's decent value for a sub-$1,000 notebook.

ACER ASPIRE 5315

PRICE $600 AFTER $149 CASHBACK / **CONTACT** ACER / **PHONE** 1300 366 567
WEB www.acer.com.au

80%

A complete notebook for $600 sounds incredible, although while you get function, speed is something else again. It comes with a 1.73GHz Intel Celeron-M 530 processor and 512MB of memory. The CPU is fine for the price, but 512MB just isn't enough to run Vista. Try running Photoshop CS2 on top of that and you're in for a torrid time. Still, with an 80GB hard drive, Pioneer DVD burner, Wi-Fi and a battery runtime of just under 2 hours, it's pretty decent value for the price.

PC User says: Excellent price, but upgrading the memory to 1GB is a must.

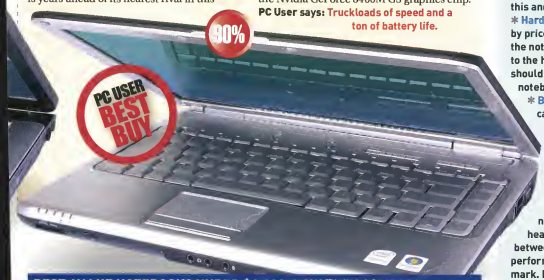
_ALL-ROUNDERS UNDER $1,700

DELL INSPIRON 1420

PRICE $1,699 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

This Inspiron 1420 notebook is a cracker. We love the 14.1in form factor: it gives a decent screen size yet still provides portability. However, it's what's under the bonnet that is stunning. A 2.2GHz Intel Core 2 Duo T7500 processor with 2GB of memory is enough to handle anything. It flew through UserBench Encode 2008, posting a score of 28.33, which is years ahead of its nearest rival in this group. It has a hefty 7,657mAh Lithium Ion battery that returned 3 hours 9 minutes on UserBench Battery 2008, but still weighed under 2.8kg. The 160GB hard drive isn't huge but, given the battery life, performance and peripheral features (FireWire, Wi-Fi, flash card reader), it delivered more overall. It's even up for some basic gaming, thanks to the Nvidia GeForce 9400M GS graphics chip.

PC User says: Truckloads of speed and a ton of battery life.



BEST-VALUE NOTEBOOKS UNDER $1,000: HOW THEY COMPARE

Model	Acer Aspire 5315	HP Compaq Presario C719TU	Toshiba Satellite A200
SPECIFICATIONS			
Processor	Intel Celeron 530 (1.73GHz)	Intel Pentium Dual-Core T2310 (1.46GHz)	Intel Pentium Dual-Core T2130 (1.86GHz)
Memory	512MB DDR2 (8MB shared)	1GB DDR2 (8MB shared)	1GB DDR2 (8MB shared)
Motherboard chipset	Intel 965 Express	Intel 965 Express	Intel 945 Express
Graphics chip	Intel 965G integrated	Intel 965G integrated	Intel 945G integrated
Hard disk drive	80GB Hitachi HTS541680	120GB Hitachi HTS541612	120GB Hitachi HTS542512
Optical drive(s)	Pioneer DVR-K17RS DVD burner	Optiarc AD-7560A DVD burner	Samsung TS-L632D DVD burner
LCD screen size/resolution (pixels)	15.4in widescreen LCD/1,280 x 800	15.4in widescreen LCD/1,280 x 800	15.4in widescreen LCD/1,280 x 800
Operating system	Windows Vista Home Basic	Windows Vista Home Basic	Windows Vista Home Basic
USB/FireWire ports	3/0	3/0	4/1
Wireless LAN	Yes	Yes	Yes
S-Video/HDMI output	Yes/No	Yes/No	Yes/No
Flash card reader	No	Yes	Yes
Battery type and capacity	11.1V/4,000mAh Lithium Ion	10.8V/4,351mAh Lithium Ion	10.8V/4,000mAh Lithium Ion
Weight (kg)	2.84	2.6	2.74
TEST RESULTS*			
UserBench Battery 2008 (hours:min)	1:49	1:54	2:01
UserBench Encode 2008 (score)	14:38	17.19	19.20
- Audio component score	12.97	12.64	14.57
- Audio time/rate (min:sec/MB/s)	3:40/2.95	3:42/2.88	3:16/3.31
- Video component score	15.63	23.42	25.10
- Video time/rate (min:sec/fps)	4:07/30.30	2:45/45.40	2:34/48.64
UserBench Image 2006 (min:sec)	16:35	8:29	6:41
UserBench Security VR 2007 (min:sec)	7:43	6:25	5:26
UserBench HL2LC 2008 (640 x 480 pixels, fps)	DNB	2.9	3.8
UserBench HL2LC 2008 (800 x 600 pixels, fps)	DNB	DNB	DNB

* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better. DNB - did not benchmark.

Buyer's checklist

There are many more notebooks on the market that we couldn't include in this feature. If you're in the market and you think you've spotted a bargain, just make sure it covers these basics.

*** Dual-core Intel processor. The latest Intel processors not only offer two cores in each unit but they deliver far greater performance levels. Few notebooks use AMD processors. We recommend Intel.**

*** 1GB of memory. Anything less than this and Windows Vista will crawl.**

*** Hard drive space. Drive space varies by price, but here's a rough guide: divide the notebook price by 10 and that's near to the hard drive capacity in GB you should expect. For example, a $1,600 notebook should get you 120-160GB.**

*** Battery. Make sure the battery capacity is at least 4,000mAh. Some ultraportable and budget notebooks only feature 2,400-2,600mAh Lithium Ion batteries that can struggle to deliver an hour's run time.**

*** Weight. In general, the bigger the notebook, the greater the number of features, but the heavier it is. The best compromise between weight and features/performance occurs around the 2kg mark. Below that, performance and battery life tend to go out the window.**

Tech terms

Dual-core. A processor that has two brains or 'cores' to improve overall performance, but which requires applications to support these processors.

GB. Short for gigabyte, equalling one billion bytes for hard drives and optical drives.

GHz. Short for gigahertz, equalling one billion clock cycles per second and used as the reference for processor clock speeds.

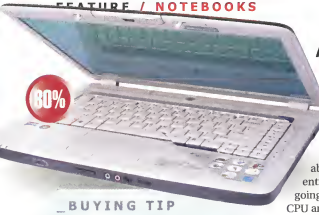
HDMI (High-Definition Multimedia Interface). A locked digital audio and video interface between compatible graphics cards and monitors/TVs.

mAh (milliampere hours). A unit of measurement for the capacity of notebook batteries; the higher, the better.

MB. Short for megabytes, equalling one million bytes and normally used in reference to system memory.

S-Video. An analogue TV connection that allows DVD movies to be played on older TVs.

Wi-Fi. Generic term used to describe wireless networking. It comes in four basic forms: 802.11a (54 megabits per second theoretical data transfer speed), 802.11b (11Mbps), 802.11g (54Mbps) and 802.11n (200Mbps plus). 802.11g is backward compatible with 802.11b.



ACER ASPIRE 5920

PRICE $1,500 AFTER $99 CASHBACK / **CONTACT** ACER
PHONE 1300 366 567 / **WEB** www.acer.com.au

The Aspire 5920 wasn't the fastest notebook in the group, but if battery life means plenty, this one delivers. Its UserBench Battery 2008 score of 3 hours 23 minutes was about as good as we saw across the entire feature, so it was remarkably good going. The 1.66GHz Core 2 Duo T5450 CPU and 2GB of memory ensure Windows Vista Home Premium isn't sluggish, and it covers the basic peripheral features well, with four USB ports and a FireWire port ready to go. The 160GB hard drive, DVD burner and its generally reasonable performance at $1,500 is pretty decent value. The fact that it includes 802.11n draft wireless is good, too.

PC User says: Excellent battery life and good levels of performance and features.

BUYING TIP

Beware the tiny ultraportable

If you're considering jumping into the ultraportable or tablet PC market, be careful where you tread. Many of the more expensive models that aim to cut down weight to almost 1kg also cut down performance, with most featuring 'ultra-low voltage' versions of Intel processors. The problem is that the processors used can deliver as little as one-third the performance you can find on larger models. We recommend you first consider the models in the $2,500 ultraportable category. Compare their performance, features, weight and battery life before you think of spending more.

MSI EX700

PRICE $1,638 / **CONTACT** MSI COMPUTER / **PHONE** (02) 9748 0070
WEB www.msicomputer.com.au

This was the only 17in model we saw in this group and, for the price, it's not a bad effort. It combines Intel's 2GHz Core 2 Duo T7250 chip with 1GB of memory and an Nvidia GeForce 8400M GS graphics chip. It's fast enough for some basic low-resolution gaming on the 1,440 x 900-pixel screen. It also turned in the second highest UserBench Encode score of the group at 25.17. UserBench Battery 2008 returned a time of 1 hour 38 minutes, which isn't too bad for a 17in notebook. It also has HDMI output.

PC User says: Worth a look for the big screen, HDMI and performance.

BEST-VALUE NOTEBOOKS UNDER $1,700: HOW THEY COMPARE

Model	Acer Aspire 5920	ASUS F5R	Dell Inspiron 1420	HP Pavilion dv2632tx	MSI EX600	MSI EX700	Sony VAIO VGNNR17G
SPECIFICATIONS							
Processor	Intel Core 2 Duo T5450 (1.66GHz)	Intel Pentium Dual-Core T2130 (1.86GHz)	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core 2 Duo T5250 (1.5GHz)	Intel Core 2 Duo T7250 (2GHz)	Intel Core 2 Duo T7250 (2GHz)	Intel Core 2 Duo T5450 (1.66GHz)
Memory	2GB DDR2	1GB DDR2 (128MB shared)	2GB DDR2	1GB DDR2	2GB DDR2	1GB DDR2	1GB DDR2 (8MB shared)
Motherboard chipset	Intel 965 Express	ATI Xpress 1100	Intel 965 Express	Intel 965 Express	Intel 965 Express	Intel 965 Express	Intel 965 Express
Graphics chip	Intel 965G integrated	ATI Radeon Xpress 1100	Nvidia GeForce 8400M GS	Nvidia N88M-GS	Nvidia GeForce 8400M G	Nvidia GeForce 8400M GS	Intel 965G integrated
Hard disk drive	160GB Hitachi HTS542516	160GB Seagate ST9160821AS	160GB Western Digital WD1600BEVS	160GB Seagate ST9160821AS	250GB Western Digital WD2500BEVS	160GB Western Digital WD1600BEVS	120GB Toshiba MK1237GSX
Optical drive(s)	LG GSA-T20N DVD burner	Matsushita UJ-850S DVD burner	LG GSA-H11N DVD burner	LG GSA-T20L DVD burner	Optiarc AD-7530B DVD burner	Optiarc AD-7530B DVD burner	Matsushita UJ-870QJ DVD burner
LCD screen size/resolution (pixels)	15.4in widescreen LCD/1,280 x 800	15.4in widescreen LCD/1,280 x 800	14.1in widescreen LCD/1,280 x 800	14.1in widescreen LCD/1,280 x 800	15.4in widescreen LCD/1,280 x 800	17in widescreen LCD/1,440 x 900	15.4in widescreen LCD/1,280 x 800
Operating system	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium
USB/FireWire ports	4/1	3/0	4/1	2/1	4/1	3/1	4/1
Wireless LAN	Yes	Yes	Yes	Yes	Yes	Yes	Yes
S-Video/HDMI output	Yes/No	No/No	Yes/No	Yes/Yes	Yes/No	No/Yes	No/No
Flash card reader	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Battery type and capacity	14.8V/4,800mAh Lithium Ion	11.1V/4,000mAh Lithium Ion	11.1V/7,657mAh Lithium Ion	10.8V/4,351mAh Lithium Ion	10.8V/4,800mAh Lithium Ion	11.1V/4,800mAh Lithium Ion	11.1V/4,800mAh Lithium Ion
Weight (kg)	3.165	2.688s	2.742	2.494	2.563	3.386	2.79
TEST RESULTS*							
UserBench Battery 2008 (hours:mins)	3:23	FAIL	3:09	1:51	1:16	1:38	2:17
UserBench Encode 2008 (score)	19.83	17.81	28.33	18.60	25.79	25.17	20.04
- Audio component score	14.52	13.77	20.95	13.77	19.25	18.95	14.85
- Audio time/rate (min:secs/MB/s)	3:16/3.30	3:27/3.13	2:16/4.77	3:27/3.13	2:28/4.38	2:30/4.31	3:12/3.38
- Video component score	27.16	22.75	38.31	25.11	34.43	33.21	27.03
- Video time/rate (min:secs/fps)	2:22/52.65	2:50/44.10	1:40/74.25	2:34/48.67	1:52/66.73	1:56/64.37	2:23/52.38
UserBench Image 2006 (min:secs)	4:19	10:50	3:21	5:41	3:19	4:09	9:31
UserBench Security VR 2007 (min:secs)	4:56	8:10	3:15	5:55	3:50	5:02	6:23
UserBench HL2LC 2008 (640 x 480 pixels, fps)	2.6	15.5	42.4	38.7	31.6	42	2.4
UserBench HL2LC 2008 (800 x 600 pixels, fps)	DNB	DNB	29.4	28.9	22.3	30.2	DNB

* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better. FAIL - did not complete the test. DNB - did not benchmark.

HP PAVILION DV2632TX

PRICE $1,599 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

This very nice dv2632tx was one of only two 14.1in notebooks in this group. Although it couldn't match the Inspiron 1420 for speed, its features and price are still good value. With Intel's Core 2 Duo T5250 and 1GB of memory, it's enough to keep you out of trouble. Application performance was below average, but the Nvidia graphics showed enough speed to handle some light 3D gaming. The real key is the peripheral features list — everything from Wi-Fi to S-Video and HDMI output, all built in. Battery life at 1 hour 51 minutes was a bit disappointing, but, overall, not a bad effort.

PC User says: Plenty of features and covers all the basics pretty well.

75%

MSI EX600

PRICE $1,492 / **CONTACT** MSI COMPUTER / **PHONE** (02) 9748 0070

WEB www.msicomputer.com.au

Feature-wise, the EX600 is one of the best notebooks in this group. It topped the hard drive table with a 250GB Western Digital drive and roared through most of our benchmark tests. The one test it performed poorly on was battery life: just 1 hour 16 minutes from the 4,800mAh Lithium Ion battery isn't really good enough for a 15.4in notebook. Otherwise, it has everything, from its DVD burner, Wi-Fi networking and flash card reader. The Core 2 Duo T7250 processor and 2GB of memory are impressive (as is the price)

PC User says: If it wasn't for the battery life, this would have been a Best Buy.

75%

ASUS F5R

PRICE $1,299 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

ASUS sent in a swag of models for us to test but, while the F5R comes at a cracking price, it's not overloaded with features. The Pentium Dual-Core T2130 processor and basic setup matches the $1,000 Toshiba Satellite A200. The only difference here is the larger 160GB hard drive. The F5R has no FireWire, no S-Video output or HDMI. Given the price, it's not surprising its application performance was the worst in the group. The bottom line is: while the price is low, so is the features list, and there's better value elsewhere.

PC User says: Low price, but slow and few peripheral features.

70%

SONY VAIO VGNNR17G

PRICE $1,599 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.vaio.com.au

The VAIO is a passable effort at this price, but some things need improvement. First up, the 120GB hard drive is the smallest in this group and something you'd expect to see in $900-$1,200 notebooks. The battery life of 2 hours 17 minutes was a decent result, but what disappointed was the fact that this was the only notebook over $1,300 not to include either an S-Video or HDMI output. The FireWire and four USB 2.0 ports cover the basics. The app performance from the Core 2 Duo T5250 was average, but the weight was on the right side of 3kg.

PC User says: A bit pricey for a 120GB hard drive notebook.

70%

EASY MEDIA
CREATOR® 10
SUITE

WINNER
PC USER
BEST BURNING SUITE 2007

250 MILLION
#1
BEST SELLING
DIGITAL MEDIA
SOFTWARE WORLDWIDE

roxio

Imagine Great Things. Now Create Them.

The new Roxio Easy Media Creator® 10 gives you creative inspiration and all the tools you need to enhance your digital lifestyle. Create, share and enjoy your movies, memories and music as only you can.

- **Convert audio and video files to the format of your choice right on your Windows Vista™ desktop.**
- **Send videos to YouTube™ with one click.**
- **Save tons of time by ripping CDs from multiple drives.**

For more information visit

MINDSCAPE

www.mindscape.com.au

Available at

Harvey Norman Officeworks DICK SMITH harris technology

& selected retailers

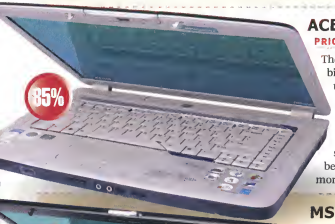
_ALL-ROUNDERS UNDER $2,500

HP PAVILION DV6614TX

PRICE $2,199 / **CONTACT** HP
PHONE 13 23 47 / **WEB** www.hp.com.au

This was a tough category to judge but, in the end, HP's dv6614tx turned out to be the pick of the bunch. It's a great mix of performance, features and value in a compact 14.1in widescreen chassis. In what was a tight group, the dv6614tx topped most of the benchmark charts, including UserBench Encode and UserBench Image. Only in 3D gaming did it drag the chain a bit. With a 250GB hard drive, DVD burner, S-Video and HDMI output, and 2-hour plus battery life, it managed to keep at or near the top of all the feature lists, and in a package well under 3kg. For us, an all-rounder not only has to do everything well, but be portable, and that's what you get here.

PC User says: Tons of features, great price and well under 3kg.

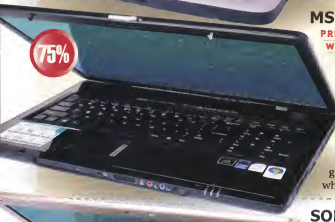


ACER ASPIRE 5920G

PRICE $1,999 / **CONTACT** ACER / **PHONE** 1300 366 567 / **WEB** www.acer.com.au

The Aspire 5920G probably did it a bit tough, coming second to the HP unit. If you've only got $2,000 to spend, it's brilliant value. The one drawback was the hefty 3.2kg weight — more than half a kilo heavier than the HP model, so, while it's cheaper and gives better battery life, it's going to hurt more carrying it around. The features list is certainly hard to fault: excellent performance from the Core 2 Duo T7300 processor and 2GB of memory, S-Video and HDMI output and a 250GB hard drive. It has features galore. Even the GeForce 8600M GS graphics have enough horsepower for decent 3D gaming. The question is whether you need gaming more than portability.

PC User says: Excellent all-round functionality, but heavier than the HP.



MSI GX700

PRICE $2,500 / **CONTACT** MSI COMPUTER / **PHONE** (02) 9748 0070
WEB www.msicomputer.com.au

The GX700 is a fully featured notebook, but you certainly pay for the privilege. The 17in widescreen LCD packs in 1,680 x 1,050-pixel resolution and with the only GeForce 8600M GT graphics chip in the group, it delivered the best 3D gaming scores of the five. However, while it comes with all the must-have extras, including HDMI and a 250GB hard drive, it's not without drawbacks. The first of those is weight — at 3.4kg, it was the heaviest in this group and one of the heaviest in the roundup. The second issue is the battery life of just 91 minutes. That's well down on the rest of this group, so, while it does plenty, it's not suited to portable apps.

PC User says: Fast and well-featured, but expensive, heavy and low on battery life.

SONY VAIO VGNCR25G

PRICE $1,899 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.vaio.com.au

This 'premium gold' VAIO comes at a pretty neat price of just $1,899, and while it's styled for the well-to-do, it lacks a bit of the functionality you'd be hoping for. The 14.1in form factor is great, but, with only a 160GB hard drive, it's not scintillating value. It only features AMD Radeon X2300-class graphics, so gaming really isn't on. On the positive side, battery life was just on the right side of 2 hours and it was the lightest in this category at just 2.43kg. The lack of HDMI output and the smaller hard drive put it behind the leading models, though.

PC User says: Not a bad model for the price if you want the bling factor.

BEST-VALUE ALL-ROUNDER NOTEBOOKS UNDER $2,500: HOW THEY COMPARE

Model	Acer Aspire 5920G	Fujitsu LifeBook E8410	HP Pavilion dv6614tx	MSI GX700	Sony VAIO VGNCR25G
SPECIFICATIONS					
Processor	Intel Core 2 Duo T7300 (2GHz)	Intel Core 2 Duo T7300 (2GHz)	Intel Core 2 Duo T7250 (2GHz)	Intel Core 2 Duo T7250 (2GHz)	Intel Core 2 Duo T7250 (2GHz)
Memory	2GB DDR2	1GB DDR2 (16MB shared)	2GB DDR2	2GB DDR2	1GB DDR2
Motherboard chipset	Intel 965 Express	Intel 965 Express	Intel 965 Express	Intel 965 Express	Intel 965 Express
Graphics chip	Nvidia GeForce 8600M GS	Nvidia GeForce 8400M GS	Nvidia GeForce 8400M GS	Nvidia GeForce 8600M GT	ATI Mobility Radeon X2300
Hard disk drive	250GB Western Digital WD2500BEVS	120GB Fujitsu MHW2120BH	250GB Western Digital WD2500BEVS	250GB Western Digital WD2500BEVS	160GB Seagate ST9160821AS
Optical drive(s)	LG GSA-T20N DVD burner	LG GSA-T20N DVD burner	SlimType DS8A1H DVD burner	Optiarc AD-7530B DVD burner	Pioneer DVR-K17 DVD burner
LCD screen size/resolution (pixels)	15.4in widescreen LCD/1,280 x 800	15.4in widescreen LCD/1,280 x 800	14.1in widescreen LCD/1,280 x 800	17in widescreen LCD/1,680 x 1,050	14.1in widescreen LCD/1,280 x 800
Operating system	Windows Vista Home Premium	Windows Vista Business	Windows Vista Home Premium	Windows Vista Home Premium	Windows Vista Home Premium
USB/FireWire ports	4/1	4/1	3/1	3/1	3/1
Wireless LAN	Yes	Yes	Yes	Yes	Yes
S-Video/HDMI output	Yes/Yes	Yes/No	Yes/Yes	No/Yes	Yes/No
Flash card reader	Yes	Yes	Yes	Yes	Yes
Battery type and capacity	14.8V/4,800mAh Lithium Ion	14.4V/5,200mAh Lithium Ion	10.8V/4,351mAh Lithium Ion	11.1V/4,800mAh Lithium Ion	11.1V/4,800mAh Lithium Ion
Weight (kg)	3.276	2.809	2.758	3.408	2.434
TEST RESULTS*					
UserBench Battery 2008 (hours:mins)	2:40	1:53	2:06	1:31	2:02
UserBench Encode 2008 (score)	25.48	25.35	26.03	25.01	24.36
- Audio component score	19.02	18.18	19.56	18.72	18.13
- Audio time/rate (min:sec/MB/s)	2:30/4.33	2:29/4.36	2:26/4.45	2:32/4.26	2:37/4.13
- Video component score	34.04	33.25	34.47	33.27	32.66
- Video time/rate (min:sec/fps)	1:53/65.97	1:56/64.44	1:52/66.81	1:56/64.49	1:58/63.30
UserBench Image 2006 (min:sec)	3:24	4:21	3:09	3:26	4:49
UserBench Security VR 2007 (min:sec)	4:13	4:18	3:39	4:11	4:50
UserBench HL2LC 2008 (640 x 480 pixels, fps)	61.1	34.9	39.1	73.7	30.1
UserBench HL2LC 2008 (800 x 600 pixels, fps)	46.7	24.8	27.1	60.1	DNB

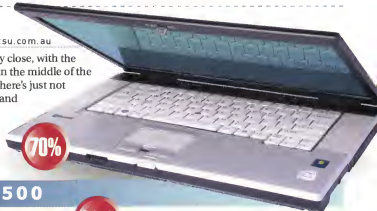
* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better. DNB - did not benchmark.

FUJITSU LIFEBOOK E8410

PRICE $2,299 / **CONTACT** FUJITSU / **PHONE** 1800 288 283 / **WEB** www.fujitsu.com.au

The E8410 is a stylish model with decent speed but nowhere near enough storage to justify this price tag. Both the Acer and HP models are faster and deliver twice the storage of this model for less money. There's no HDMI here and the battery life rating of 1 hour 53 minutes was below average in this group. The application speed of all five notebooks here was pretty close, with the E8410's results placing it in the middle of the pack. The bottom line is there's just not enough hard drive space and battery life for the price.

PC User says: A 120GB hard drive isn't enough for a $2,299 notebook.



_ULTRAPORTABLES UNDER $2,500

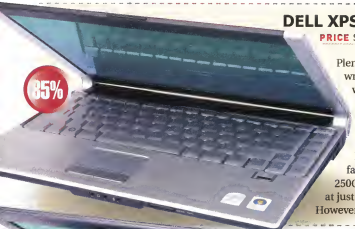
TOSHIBA SATELLITE U300

PRICE $2,199 / **CONTACT** TOSHIBA

PHONE 13 30 70 / **WEB** www.isd.toshiba.com.au

It's not often the cheapest notebook in the group turns out to be the best, but Toshiba has been cranking up the value lately and this Satellite U300 is a case in point: it was the only one of this group to deliver 250GB of hard drive space. It was also the only one with a runtime of over 3 hours. Its application performance was excellent, with the second-fastest results in this group. It does lack one or two features (no FireWire, S-Video or HDMI) but it offers speed, space and size. The 13.3in form factor and 2kg weight are great, and it's not compromising on major features either.

PC User says: Speed, space and size are the features that matter.



DELL XPS M1330

PRICE $2,399 / **CONTACT** DELL / **PHONE** 1800 812 393 / **WEB** www.dell.com.au

Plenty has already been written about the XPS M1330, with lots of rave reviews. However, when you compare it to the Satellite U300, I don't think it quite matches up. Certainly the 160GB hard drive in this model fails to match the U300's 250GB capacity. The battery life at just under 2-hours is well behind. However, the M1330 does have some excellent features, such as an S-Video output, built-in FireWire, HDMI and an LED backlight screen (this is supposed to deliver better battery life, although it didn't appear to do so in our testing). The Core 2 Duo T7700 processor is currently as fast as you can get in a mobile CPU and the application speed here is as good as we saw in this group. Add in sub-2kg weight and it's not a bad model.

PC User says: Speed to burn, but the 160GB hard drive is a bit small.

ACER TRAVELMATE 6292

PRICE $2,299 / **CONTACT** ACER / **PHONE** 1300 366 567 / **WEB** www.acer.com.au

The TravelMate 6292 is a neat little 12.1in model and, despite being a little chunky, it has plenty of features including FireWire and S-Video output. The performance from the Core 2 Duo T7500 processor and 2GB of memory was the slowest of the three Intel-based models, but not by much. Its $2,299 price tag placed it in between the Toshiba and Dell models. The 160GB hard drive matched the Dell and HP models, and a Matsushita (Panasonic) DVD burner is included. The battery life at 2 hours 15 minutes wasn't bad, and the weight at a breath over 2kg was also pretty good.

PC User says: Good features and portability all round.

BEST-VALUE ULTRAPORTABLE NOTEBOOKS UNDER $2,500: HOW THEY COMPARE

Model	Acer TravelMate 6292	ASUS R2Hv	Dell XPS M1330	HP Pavilion tx1219AU	Toshiba Satellite U300
SPECIFICATIONS					
Processor	Intel Core 2 Duo T7500 (2.2GHz)	Intel Pentium-M (1GHz)	Intel Core 2 Duo T7700 (2.4GHz)	AMD Turion 64 X2 TL-64 (2.2GHz)	Intel Core 2 Duo T7500 (2.2GHz)
Memory	2GB DDR2 (8M8 shared)	1.23GB DDR2	2GB DDR2	2GB DDR2 (64M8 shared)	2GB DDR2 (8M8 shared)
Motherboard chipset	Intel 965 Express	Intel 910GM	Intel 965 Express	Nvidia nForce	Intel 965 Express
Graphics chip	Intel 965G integrated	Intel 910GM integrated	Nvidia GeForce 8400M GS	Nvidia GeForce Go 6150	Intel 965G integrated
Hard disk drive	160GB Toshiba MK1637GSX	80GB Toshiba MK8039GAH	160GB Seagate ST9160823AS	160GB Fujitsu MHW2160BH	250GB Fujitsu MHY2250BH
Optical drive(s)	Matsushita UJ-850S DVD burner	None	Matsushita UJ-857G DVD burner	LG GSA-T20L DVD burner	Matsushita UJ-852S DVD burner
LCD screen size/resolution (pixels)	12.1in widescreen LCD/1,280 x 800	5.6in widescreen/ 848 x 480	13.3in widescreen LCD/1,280 x 800	12.1in widescreen LCD/1,280 x 800	13.3in widescreen LCD/1,280 x 800
Operating system	Windows Vista Business	Windows Vista Business	Windows Vista Ultimate	Windows Vista Home Premium	Windows Vista Business
USB/FireWire ports	3/1	3/0	2/1	3/0	3/0
Wireless LAN	Yes	Yes	Yes	Yes	Yes
S-Video/HDMI output	Yes/No	No/No	No/Yes	Yes/No	No/No
Flash card reader	Yes	Yes	Yes	Yes	Yes
Battery type and capacity	11.1V/4,800mAh Lithium Ion	7.4V/3,430mAh Lithium Polymer	11.1/5,045mAh Lithium Ion	7.2V/5,138mAh Lithium Ion	10.8V/5,200mAh Lithium Ion
Weight (kg)	2.051	0.907	1.951	2.126	2.088
TEST RESULTS*					
UserBench Battery 2008 (hours:min)	2:15	1:35	1:59	1:25	3:04
UserBench Encode 2008 (score)	27.05	7.67	29.32	22.15	28.21
- Audio component score	20.61	6.83	21.62	16.62	20.93
- Audio time/rate (min:sec/MB/s)	2:18/4.69	6:58/1.55	2:12/4.92	2:52/3.78	2:16/4.76
- Video component score	35.16	8.44	39.79	29.37	37.96
- Video time/rate (min:sec/fps)	1:50/68.15	7:38/16.36	1:37/77.13	2:11/56.92	1:41/73.61
UserBench Image 2006 (min:sec)	3:29	DN8	3:11	4:29	3:13
UserBench Security VR 2007 (min:sec)	3:16	10:10	3:02	4:35	3:26
UserBench HL2LC 2008 (640 x 480 pixels, fps)	14.3	0.8	45.4	12.9	3.7
UserBench HL2LC 2008 (800 x 600 pixels, fps)	DN8	DN8	31.8	DN8	DN8

* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better. DN8 - did not benchmark.

HP PAVILION TX1219AU

PRICE $2,299 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

HP hasn't been big on tablet PCs in the past, so the tx1219AU is a surprise. It's also unusual in that it features an AMD Turion 64 X2 TL-64 processor. Out of 30 notebooks, this was the only AMD-based model we saw. As it was, the application speed was well behind the others across the board and the 1 hour 25 minutes battery runtime was pretty disappointing. The tx1219au features an Nvidia-chipset chassis with 2GB of memory, so Vista Home Premium, the lowest of the four options here, kicks along as best it can on this CPU. Overall, it's a nice idea, but at 2.13kg, it's a bit heavy to carry around as a tablet PC.

PC User says: **Weight, battery life and slow speed are issues here.**

ASUS R2HV

PRICE $1,699 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

Arguably a better tablet PC form factor is this R2Hv. The problem is that you take such a hit in performance that it's not really usable. The 1GHz Pentium-M ULV processor and 1.23GB of memory might have worked reasonably well with Windows XP Tablet PC Edition, but trying to use Vista Business on this thing is difficult. It's not just that our benchmark tests were slow; the R2Hv is slow to do everything. And with a battery life of only 1 hour 35 minutes, you don't get a whole lot in return for that slow speed. We also had trouble with the touchscreen pen falling out. Nice idea, but needs more grunt.

PC User says: **Nice form factor and light, but way too slow and poor battery life.**

_ULTRAPORTABLES UNDER $3,500

HP COMPAQ 2510P

PRICE $2,699 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

Only two of the six models in this category delivered decent performance, but the same two also delivered the worst battery life. Although these sub-$3,500 notebooks weighed only around 1.5kg, the hit on performance and features seems hardly worth the compromise. This Compaq 2510p floated to the top of the list with the least amount of drawbacks. Its Core 2 Duo U7600 processor clocks along at just 1.2GHz, so its performance levels are about half of what we saw in the $2,500 ultraportable category. It weighs just under 1.6kg and the battery life was an excellent 3 hours 49 minutes. However, while it includes a built-in DVD burner, you only get an 80GB hard drive, and it's just a shame about the performance hit.

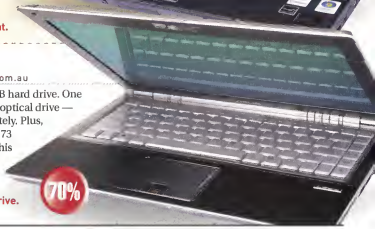
PC User says: **Brilliant battery life, but performance wasn't great.**

ASUS U3S

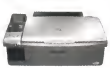
PRICE $2,799 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The U3S has features and size more in keeping with our $2,500 ultraportable entrants, but, with its $2,799 price tag, it's on the wrong side for value. Performance and price were good for this group, though. Unfortunately, the definition of ultraportable in this category varied from vendor to vendor. The U3S weighs in at a tick under 2kg but is loaded with extras including FireWire, HDMI, S-Video and even a 160GB hard drive. One thing that's missing is an optical drive — you have to buy it separately. Plus, with a battery life of only 73 minutes, it's hard to see this working out on the road.

PC User says: **Not really ultraportable at around 2kg and no inbuilt DVD drive.**



PSON
EED YOUR VISION



ONLY REPLACE THE COLOUR YOU USE.

FROM $8.99 PER CARTRIDGE

FUJITSU LIFEBOOK T2010

PRICE $3,199 / **CONTACT** FUJITSU / **PHONE** 1800 288 283 / **WEB** www.fujitsu.com.au

The T2010 is a convertible-style tablet PC that delivered similar performance and battery runtime levels to the Compaq 2510p. Its UserBench Encode score of 15.46 was a distant third in this group, but its 3 hours 28 minutes battery time was a close second behind the Compaq. That's thanks largely to the largest-capacity battery in this group at 5,800mAh. The 120GB hard drive was a better option than the 2510p's 80GB model, although the T2010 has no optical drive built in, nor does it include one in the price. It has FireWire, Wi-Fi and a flash card reader, and weighs in at a reasonable 1.66kg. All up, it's got just enough speed to make Windows Vista Business usable, but at a price that hurts.

PC User says: $500 more expensive than the HP and no optical drive.

ASUS U1F

PRICE $3,499 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The U1F has a small 11.1in widescreen 16:9 display. It comes with a small 2,400mAh Lithium Ion battery but also includes a larger 4,800mAh model in the price. We tested the smaller battery, which gave the unit a weight of just 1.08kg. The UserBench Battery 2008 result of 1 hour 22 minutes was poor, but not dreadful, and it should double to 2 hours 44 minutes with the double-capacity battery. However, the Core Duo U2400 processor hardly set the world on fire for performance, with low encoding scores on our tests. For your $3,499, you only get a 100GB hard drive (our test unit only featured an 80GB Toshiba unit). At least the DVD burner is included, if only as an external model.

PC User says: Incredibly light, but very slow and expensive.

BEST-VALUE ULTRAPORTABLE NOTEBOOKS UNDER $3,500: HOW THEY COMPARE

Model	ASUS U1F	ASUS U3S	ASUS U6S	Fujitsu LifeBook P1610	Fujitsu LifeBook T2010	HP Compaq 2510p
SPECIFICATIONS						
Processor	Intel Core Duo U2400 (1.06GHz)	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core Solo U1400 (1.2GHz)	Intel Core 2 Duo U7600 (1.2GHz)	Intel Core 2 Duo U7600 (1.2GHz)
Memory	1GB DDR2 (8MB shared)	1.5GB DDR2	2GB DDR2	1GB DDR2 (8MB shared)	2GB DDR2 (8MB shared)	1GB DDR2 (32MB shared)
Motherboard chipset	Intel 945GM Express	Intel 965 Express	Intel PM965 Express	Intel 945GM Express	Intel 965 Express	Intel 965 Express
Graphics chip	Intel 945GM integrated	Nvidia GeForce 8400M G	Nvidia GeForce 8400M G	Intel 945GM integrated	Intel 965G integrated	Intel 965G integrated
Hard disk drive	80GB Toshiba MK8009GAH	160GB Hitachi HTS541616	250GB SATA	80GB Toshiba MK8007GAH	120GB Fujitsu MHW2120BH	80GB Toshiba MK8009GAH
Optical drive(s)	None	External USB DVD burner	Integrated DVD burner	None	None	Matsushita UJ-842S DVD burner
LCD screen size/resolution (pixels)	11.1in widescreen LCD/1,366 x 768	13.3in widescreen LCD/1,280 x 800	12.1in widescreen LCD/1,280 x 800	8.9in widescreen LCD/1,280 x 768	12.1in widescreen LCD/1,280 x 800	12.1in widescreen LCD/1,280 x 800
Operating system	Windows Vista Business	Windows Vista Ultimate	Windows Vista Ultimate	Windows Vista Business	Windows Vista Business	Windows Vista Business
USB/FireWire ports	4/1	3/1	3/0	2/0	2/1	2/1
Wireless LAN	Yes	Yes	Yes	Yes	Yes	Yes
S-Video/HDMI output	No/No	Yes/Yes	No/Yes	No/No	No/No	No/No
Flash card reader	Yes	Yes	Yes	Yes	Yes	No
Battery type and capacity	11.1V/2,400mAh Lithium Ion	11.1V/4,800mAh Lithium Ion	11.1V/2,400mAh Lithium Ion	10.8V/2,600mAh Lithium Ion	10.8V/5,800mAh Lithium Ion	10.8V/5,092mAh Lithium Ion
Weight (kg)	1.076	1.979	1.627	1.028	1.659	1.596
TEST RESULTS*						
UserBench Battery 2008 (hours:min)	1:22	1:13	0:43	1:36	3:28	3:49
UserBench Encode 2008 (score)	11:23	27.61	28.28	9.25	15.46	15.33
- Audio component score	8.64	20.63	21.26	8.74	11.45	11.71
- Audio time/rate (min:sec/MB/s)	5:34/1.94	2:18/4.70	2:14/4.84	5:26/1.99	4:09/2.60	4:04/2.66
- Video component score	14.63	36.81	37.42	9.67	20.85	19.88
- Video time/rate (min:sec/fps)	4:24/28.36	1:45/71.34	1:43/72.52	6:40/18.74	3:05/40.42	3:14/38.53
UserBench Image 2006 (min:sec)	WNR	3:32	5:22	WNR	5:53	WNR
UserBench Security VR 2007 (min:sec)	WNR	4:00	5:23	12:48	4:56	WNR
UserBench HL2LC 2008 (640 x 480 pixels, fps)	1.9	32.8	31.7	2.5	2.9	1.9
UserBench HL2LC 2008 (800 x 600 pixels, fps)	DN8	23.2	22.9	DN8	DN8	DN8

* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better. DN8 - did not benchmark. WNR - would not run.

ASUS U6S

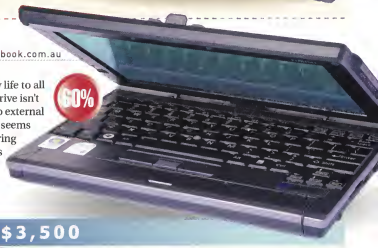
PRICE $2,999 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The last of the ASUS units submitted into this category, the U6S is a 12.1in ultraportable with built-in DVD drive at 1.63kg. With its 2.2GHz Core 2 Duo T7500 processor and 2GB of memory, it topped all the performance tests in this group. It even packs in a roomy 250GB hard drive plus Wi-Fi and HDMI output. Despite ASUS telling us it comes with a 4,800mAh battery, our review unit came with two small 2,400mAh batteries that lasted only 43 minutes each. Going for two smaller batteries might help the weight, but at this price, that's unacceptable. There is a larger-capacity battery available, although that would also push the weight up from 1.63kg towards 2kg. The trackpad buttons on this one are also awful, with too much bending and flexing to operate easily.

PC User says: Great performance — but only 43 minutes battery life?

FUJITSU LIFEBOOK P1610

PRICE $3,099 / **CONTACT** FUJITSU / **PHONE** 1800 288 283 / **WEB** www.lifebook.com.au



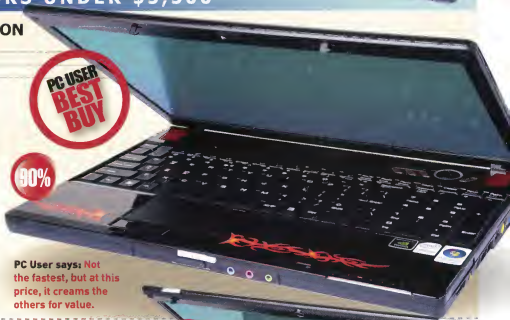
The P1610 was the smallest and lightest of the notebooks we tested, weighing in at just 1.03kg. However, it was also the slowest due to its Core Solo U1400 processor. Our test unit came with just a 2,600mAh Lithium Ion battery, although Fujitsu claims it comes with a 5,200mAh unit. With the 2,600mAh, we got just 1 hour 22 minutes of runtime. As a convertible-type tablet PC, it's the right weight, but this group shows just how difficult it is to get size, performance and battery life to all line up. The 80GB hard drive isn't great value and there's no external optical drive included. It seems you're better off considering the 2kg $2,500 notebooks for performance.

PC User says: Tiny but just way too slow.

_GAMING NOTEBOOKS UNDER $3,500

MSI GX600 EXTREME EDITION

PRICE $2,086 / **CONTACT** MSI COMPUTER
PHONE (02) 9748 0070
WEB www.msicomputer.com.au



This category was another case where the cheapest model turned out to be the best value of the lot. The GX600 features a 1,680 x 1,050-pixel 17in widescreen LCD driven by Nvidia's GeForce 8600M GT graphics chip. It delivers some pretty decent speed on *Half Life 2: Lost Coast* (HL2:LC), topping 72.4fps at 800 x 600 pixels. There were two other notebooks faster than this, but to get the class-leading speed from the Pioneer model, you have to spend an extra $1,400! The GX600 packs in the highest application performance of any notebook we tested, thanks to its 'turbo' mode. The 4,800mAh Lithium Ion battery lasted only 1 hour 31 minutes, and at this price, you only get an 8x DVD burner, but, all up, more than enough value at this price.

PC User says: Not the fastest, but at this price, it creams the others for value.

PIONEER DREAMBOOK POWER M57RU

PRICE $3,499 / **CONTACT** PIONEER COMPUTERS / **PHONE** 1800 883 218
WEB www.pioneer.net.au

The M57RU was equally the most expensive notebook of the roundup but it delivered big on features. For your $3,499 you get the fastest gaming notebook we've tested — its 96.8fps on HL2:LC at 800 x 600 pixels was as good as we've seen. The 17in 1,920 x 1,200-pixel widescreen LCD is driven by Nvidia's 8700M GT graphics chip and is the best we've seen to date. However, this thing weighs 4.17kg, making it the heaviest notebook we've tested, too. The standard-capacity battery lasted just short of 90 minutes.

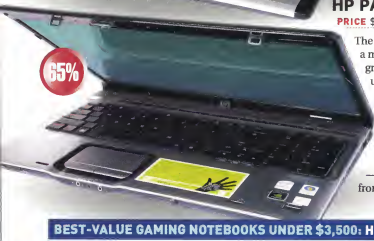
PC User says: Gaming speed to burn, but very pricey.

ASUS G2S

PRICE $2,999 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

The G2S features a high-resolution 17in widescreen panel. It's a better screen than the MSI GX600, but the $2,999 is quite a deal more than the MSI. The G2S also only includes a 160GB hard drive. Our test unit came with a Toshiba HD DVD/DVD combo drive, although all you'll get at this price is a standard DVD burner. Pity. The unit has five USB 2.0 ports and includes both S-Video and HDMI output. It features a Core 2 Duo T7500 processor, which sadly awarded it the wooden spoon on our UserBench Encode 2008 test.

PC User says: Reasonable value, although a 200GB hard drive would have been better value.



HP PAVILION DV9613TX

PRICE $2,799 / **CONTACT** HP / **PHONE** 13 23 47 / **WEB** www.hp.com.au

The dv9613tx is a bit of a mixed bag, with some great features and some ugly ones that ultimately undo it as a gaming notebook. First up, truckloads of storage make this the most tricked-up storage notebook in the roundup — there's 280GB in total from a 120GB and 160GB hard drive. It's also loaded with peripheral features, including S-Video and HDMI output, FireWire, Wi-Fi and so on. Unfortunately, the 17in widescreen LCD is only a low 1,440 x 900-pixel model (the lowest resolution in this group) and the graphics are delivered by a GeForce 8400M GS. HL2:LC can't even hit 40fps at 640 x 480-pixel resolution. One plus is great battery life for this category.

PC User says: Lots of storage, but inadequate for even modest 3D gaming.

BEST-VALUE GAMING NOTEBOOKS UNDER $3,500: HOW THEY COMPARE

Model	ASUS G2S	HP Pavilion dv9613tx	MSI GX600 Extreme Edition	Pioneer DreamBook Power M57RU
SPECIFICATIONS				
Processor	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core 2 Duo T7500 (2.2GHz)	Intel Core 2 Duo T7700 (2.4GHz)
Memory	2GB DDR2	2GB DDR2	2GB DDR2	3GB DDR2
Motherboard chipset	Intel 965 Express	Intel 965 Express	Intel 965 Express	Intel 965 Express
Graphics chip	Nvidia GeForce 8600M GT	Nvidia GeForce 8400M GS	Nvidia GeForce 8600M GT	Nvidia GeForce 8700M GT
Hard disk drive	160GB Seagate ST9160821AS	160GB Hitachi HTS541616 + 120GB Seagate ST9120822AS (280GB total)	250GB Western Digital WD2500BEVS	200GB Hitachi HTS722020
Optical drive(s)	8x DVD-Multi burner (Toshiba TS-L802A HD-DVD combo drive supplied in test system)	SlimType DS8A1H DVD burner	8x DVD-Multi burner (Optiarc 8C-5500A BD-RDM/DVD combo drive supplied in test system)	Samsung TS-L632D DVD burner
LCD screen size/resolution (pixels)	17in widescreen LCD/1,920 x 1200	17in widescreen LCD/1,440 x 900	17in widescreen LCD/1,680 x 1,050	17in widescreen LCD/1,920 x 1200
Operating system	Windows Vista Ultimate	Windows Vista Home Premium	Windows Vista Home Premium	Windows XP Pro SP2
USB/FireWire ports	5/1	3/1	4/0	4/1
Wireless LAN	Yes	Yes	Yes	Yes
S-Video/HDMI output	Yes/Yes	Yes/Yes	Yes/Yes	Yes/No
Flash card reader	No	Yes	Yes	No
Battery type and capacity	14.8V/4,800mAh Lithium Ion	14.4V/4,375mAh Lithium Ion	10.8V/4,800mAh Lithium Ion	14.4V/4,400mAh Lithium Ion
Weight (kg)	4.014	3.568	2.722	4.174
TEST RESULTS*				
UserBench Battery 2008 (hours:minutes)	1:15	2:29	1:32	1:27
UserBench Encode 2008 (score)	26.90	28.35	32.96	30.46
- Audio component score	20.36	20.95	24.31	22.34
- Audio time/rate (min:sec/MB/s)	2:20/4.63	2:16/4.77	1:57/5.53	2:07/5.09
- Video component score	35.27	38.37	44.71	41.64
- Video time/rate (min:sec/fps)	1:49/68.35	1:40/74.36	1:26/86.64	1:32/80.69
UserBench Image 2006 (min:sec)	3:38	3:34	3:05	3:05
UserBench Security VR 2007 (min:sec)	4:18	3:26	3:49	2:51
UserBench HL2LC 2008 (640 x 480 pixels, fps)	80.6	39.3	87.1	102.2
UserBench HL2LC 2008 (800 x 600 pixels, fps)	75.4	26.9	72.4	96.8

* For UserBench tests with MB/s and fps scores, higher is better; for time-based scores, lower is better.

MSI
MICRO-STAR INTERNATIONAL

MSI recommends Windows Vista® Home Premium

The World's First Turbo Notebook with Overcolocking Capability

GX600

Extreme Edition

- Intel® Centrino® Duo Mobile Technology
  - Intel® Core 2 Duo T7500 2.2GHz CPU
  - Intel® PM965 Express Chipset
  - Intel® Next-Gen Wireless-N
- Genuine Windows Vista® Home Premium
- 15.4" WSXGA (1650 x 1080) Glare TFT-LCD
- Nvidia Geforce 8600M GT 3D Graphic Card 512M VRAM
- 2G DDR-II(667MHz) Memory
- 250G SATA Hardisk Driver
- 802.11 A/B/N Wireless / Bluetooth
- Blu-Ray DVD
- Racer-Class Metal and Micro Processed 3D Speaker Aperture
- The Exquisite and Stylized Design and Colorful W,A,S,D Buttons
- HDMI (High-Definition Multimedia Interface) Output
- The latest E-SATA Support
- MSI's Exclusive Turbo Drive Engine (TDE) Technology

One touch Turbo Button to reach 2.7GHz CPU Performance

TurboBook

MSI Exclusive TDE Turbo Drive Engine Technology

HDMI HIGH DEFINITION MULTIMEDIA INTERFACE

DOLBY HOME THEATER

NVIDIA GeForce

intel Centrino Duo Core 2 Duo inside

www.msicomputer.com.au

Celeron, Celeron Inside, Centrino, Centrino Logo, Core Inside, Intel, Intel Logo, Intel Core, Intel Inside, Intel Inside Logo, Intel Viiv, Intel vPro, Itanium, Itanium Inside, Pentium, Pentium Inside, Xeon, and Xeon Inside are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

2 Years Global Warranty + Australia Wide Pickup & Return

Stay connected with a smartphone

Get email, internet and your favourite applications on the go.
David Flynn reviews the latest crop of smartphones.

Want to check your email on the move? You might not realise it, but almost every phone these days can do email — if you know the right settings and your mobile account includes a data component. But few people bother and with good reason: the average phone's screen, interface and keypad are usually not created with email in mind. Smartphones, on the other hand, are deliberately designed for email and much more. This includes high-speed internet access over the latest 3G networks, with connections that are faster than many home ADSL broadband plans. They also have a superior set of diary applications for managing your appointments, usually with connection to your PC so you can synchronise your diary with Outlook. Their larger screens, superior keyboards (especially ones with a QWERTY layout) and the use of specialised operating systems all set them apart from the mobile masses. We're even seeing advanced features such as GPS navigation, which works brilliantly with Google Maps. Our annual smartphone feature gets hands on with 21 devices in all price ranges. We start by reviewing models with QWERTY keypads (laid out like your computer keyboard), then take a look at those with conventional alphanumeric keypads — the type we're used to seeing on most mobile phones. Some models were also reviewed last year and they're now clearly showing their age. This very fast-moving and competitive market rarely rewards 'classic' products, even if they're just 12 months old.

_SMARTPHONES WITH QWERTY KEYPADS

PC USER BEST BUY

HTC TYTN II

PRICE $1,100 / **CONTACT** HTC
PHONE 1300 769 669
WEB www.htc.com

95%

When it came to the larger-style QWERTY smartphones, choosing our Best Buy in this category proved difficult. The TyTN II just won because this sophisticated clamshell smartphone has a generous tilt-and-slide screen and a superb keyboard. Its only real flaw is the relatively small 1,350mAh battery. If you trot out everything this phone has on tap, including the HSDPA 3.6 3G connection, Skype over Wi-Fi and inbuilt GPS, the phone demands a nightly recharge. HTC cleverly designed the TyTN II to accept a USB charge from your PC, which defrays that downside. You can drive it using the keyboard, a stylus or finger, plus there's a three-way scroll wheel on the left of the chassis. Toss in a 3MP camera and this is the pinnacle of the Windows Mobile smartphone world.
PC User says: It certainly packs a punch, as long as you remember to charge it every night.

90%

BLACKBERRY CURVE 8300

PRICE $650 / **WEB** www.blackberrycurve.com

We're not surprised that the Curve 8300 series is such a hot seller. It takes what BlackBerry does best: simple, hassle-free mobile email, compressed so that it comes down fast and doesn't require a high-limit data plan. It's even so smart that large image attachments are delivered to your device as thumbnails. To that, the Curve 8300 adds great multimedia, highly accurate voice-activated dialling, a stylish silver shell and a delightful QWERTY keypad that's better than the one found on some larger devices. And if you track down the 8310 model, you'll also find a GPS receiver. The screen is bright and sharp, and the interface highly responsive. However, it's a GSM phone, so forget about the speeds of 3G (let alone HSDPA) for web browsing. There's far less third-party software on offer compared to the Windows Mobile platform, too.
PC User says: The higher mobile email sits on your list, the better the Curve is for you.

PC USER BEST BUY

I-MATE ULTIMATE 9502

PRICE $1,300 / **CONTACT** I-MATE / **PHONE** 1300 850 513 / **WEB** www.imate.com

Take the cool form factor of the Hiptop Slide, add Windows Mobile 6 Professional and stir in just about every feature the road warrior needs (such as HSDPA 3.6 and GPS) and this is what you get. It's got a solid feel, but the keyboard is too tiny. The 2.8in screen runs at 640 x 480 VGA resolution with video output for full-size monitors or even a projector, which is certain to impress clients. Plug an external keyboard into the mini-USB port, add a microSD memory card for storage, and you've got a de facto laptop.

PC User says: An impressive smartphone whose features belie its size.

PALM TREO 500

PRICE $580
CONTACT PALM
PHONE 1800 350 535
WEB www.palm.com.au

This one debuted late last year as the Treo 500v, running Windows Mobile 5 and locked to the Vodafone network. Now it's been upgraded to Windows Mobile 6 and is up for grabs on any 3G carrier — but not Telstra's Next G. While the BlackBerry reigns at email, the Treo 500 serves up a better overall experience for managing your day and choosing from a wealth of third-party software. The sharp 2.5in screen with 320 x 240 resolution, small yet comfortable keyboard and 2MP camera all round out this impressive package.

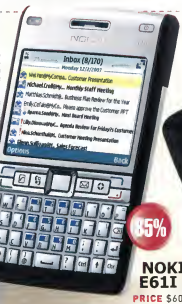
PC User says: While lacking HSDPA and Wi-Fi, what it offers makes this the best smartphone for the mass market.

MOTOROLA MOTO Q 9H

PRICE $750
CONTACT MOTOROLA / **PHONE** 1300 138 823
WEB www.motorola.com.au

When it comes to conventionally-shaped Windows Mobile smartphones with QWERTY keypads, this one is our pick of the bunch — as long as Wi-Fi isn't on your must-have list. The Q 9h has just about everything else and packs it all into a slim profile. Available on all 3G networks with HSDPA 3.6, it's no slouch at surfing or downloading, or being used as a 'tethered modem' for your notebook. The keyboard is one of the best we've used in such a device, with a slightly soft rubber coating (to cushion the fingertips), short yet positive travel and a consistent blue backlight. Just be sure the MOTO Q 9h you're looking at buying has the Windows Live Messenger mobile client, as the earliest Vodafone models cut this from the OS.

PC User says: Great if you don't need Wi-Fi.



NOKIA E61I

PRICE $600
CONTACT NOKIA / **PHONE** 1300 366 733
WEB www.nokia.com.au

We've long considered Nokia's E61 as one of the undiscovered treats of the smartphone scene, so the addition of a decent 2MP camera and thumb-friendly five-way navigation pad in the refreshed E61i only strengthens its appeal. Standout traits are the large 2.8in screen with its uncluttered interface, and the keyboard, whose large keys still have a pleasingly soft movement. You can also connect to VoIP services that use the SIP protocol (Skype is not among them) for making VoIP calls if you're within range of a Wi-Fi network. It only has Bluetooth 1.2 for PC connection, but without HSDPA you'll probably only use the E51i's Bluetooth to connect a headset.

PC User says: If you're a diehard Nokia fan, the closest thing you can get to a BlackBerry.

NOKIA E90 COMMUNICATOR

PRICE $1,100 / **CONTACT** NOKIA
PHONE 1300 366 733
WEB www.nokia.com.au

This big bruiser from Nokia's highly respected Communicator series is large, solid and heavy, with a price tag to suit. However, it does a lot of what you'd use a laptop for when travelling, making it one of the most fully-featured smartphones you can get. It's hard not to be awed by the E90's 4in screen, which runs at 800 x 352 pixels and runs fast thanks to the nimble Symbian operating system, which Nokia has honed over many years. There's the speed of HSDPA 3.6 and Wi-Fi, a generous 3.2MP camera with a flash and autofocus, GPS navigation and — in the end — more features than we could possibly detail.

PC User says: Ideal for those who'd like to travel without a notebook.

Buyer's checklist

Globetrotting. If you do a lot of overseas travel, especially to the US, and want to bring your smartphone along, look for a phone that supports GSM quad-band. This is the four sets of frequencies used by the GSM network around the world. Tri-band GSM mobiles usually work on the 900MHz band (used in Australia, Europe and most of Asia), plus the European 1,800MHz and US 1,900MHz bands, but miss the 850MHz band that's used in much of the US. However, be wary of using it to download your email because data roaming charges are usually a killer!

Battery life. Phones that use both 3G and GSM often quote two sets of figures because GSM uses less power. Talk time on GSM is at least twice that of 3G, although standby is only a third more because the 'standby' drain on both bands is relatively low.

Viewing or doing? If you intend to send a lot of email and do instant messaging and generally a lot of typing with your smartphone, lean towards devices with larger screens and keyboards, as well as an HSDPA-enhanced 3G connection.

Get hands on. Don't let the salesperson drive the demonstration. Try the phone for yourself to see if the keys are the right size and have the right 'feel', if the screen is large enough to read at a glance, and if the menu and user interface make sense.

SONY ERICSSON P1I

PRICE $700 / **CONTACT** SONY ERICSSON
PHONE 1300 650 050
WEB www.sonyericsson.com.au

Despite almost bursting at its shiny silver seams with features, the P1i faces the same challenge as the previous M600i model. Owners must put a lot of time and effort into mastering them all, and a relatively cluttered interface and oddball keypad design (which parks two letters on each rocker-switch button) presents quite a learning curve. Get past that and you'll be rewarded by treats like a live RSS feed reader for pulling updates from web sites (it's especially great for news and sports), a business card reader, Wi-Fi with Skype capability (using the iSkoot software client) and a 3.2MP camera. There's 3G, but no HSDPA.

PC User says: Other smartphones manage to deliver most of the same features in a more elegant and easier-to-use package than what's available here.

ASUS M530W

PRICE $600 / **CONTACT** ASUS
PHONE 1300 278 788 / **WEB** www.asus.com.au

In most respects, the M530W is just another Windows Mobile smartphone. Even features such as Wi-Fi and 3G are these days almost commonplace, with HSDPA — something the M530W lacks — being the next box that users will expect to find ticked. In other areas, it falls well behind the pack, with an awkward keyboard and its reliance on a slow USB 1.1 connection for desktop synchronisation. What makes this model unique is the business card 'scanner'. Take a snap of any business card with the 2MP camera (image quality is enhanced by the auto-macro mode and 'photo assist' light) and the card's typed data is converted into a quite-accurate form that can be imported into your address book.

PC User says: Can one winning feature make up for several shortcomings? It's your call.

QWERTY SMARTPHONES: HOW THEY COMPARE

Model	ASUS M530W	BlackBerry Curve 8300	BlackBerry 8800	hiptop slide	HTC TyTN II	i-mate Ultimate 9502	Motorola MOTO Q 9h	Nokia E61i	Nokia E90 Communicator	Pal Tre
Band/s	3G, GSM tri-band	GSM quad-band	GSM quad-band	GSM quad-band	3G, Next G, GSM quad-band	3G, Next G, GSM quad-band	3G	3G, GSM quad-band	3G, GSM quad-band	3G tri-
HSDPA	No	No	No	No	3.6	3.6	3.6	No	3.6	No
Wi-Fi	802.11b/g	No	No	No	802.11b/g	802.11b/g	No	802.11b/g	802.11b/g	No
Screen	2.4in	2.4in	2.4in	2.5in	2.8in	2.8in	2.54in	2.8in	4in	2.5
Operating system	Windows Mobile 6 Standard	BlackBerry	BlackBerry	Danger OS	Windows Mobile 6 Professional	Windows Mobile 6 Professional	Windows Mobile 6 Standard	Symbian 9.2 Series 60	Symbian 9.2 Series 60	Wi Mo Sta
Expansion	microSD	microSD	microSD	microSD	miniSD	microSD	microSD	microSD	microSD	mic
Camera	2MP	2MP	No	1.3MP	3MP	3MP	2MP	2MP	3MP	2M
Battery - talk (hours)	3	4	5	5	3	4.5	6.5	5h	5	4.5
Battery - standby (hours)	150	400	520	120	150	180	480	450	340	240

70%

BLACKBERRY 8800

PRICE $800
WEB www.blackberry.com

When compared to its consumer siblings such as the Pearl and Curve, the BlackBerry 8800 is definitely a 'built for business' BlackBerry. It's got the standard ingredients of all BlackBerrys, from surprisingly good handling of multimedia to a no-nonsense design. We're less enamoured of the QWERTY keypad, as the keys are too flush to the case and jammed too close together. There's no digital camera, so if that's a must-have, consider the 8300 Curve. The 8800 includes a GPS receiver and its own BlackBerry Maps application — although we prefer Google Maps. However, you can also get GPS on the 8310 Curve.

PC User says: **The BlackBerry 8800 is likely to be better suited to tightly controlled enterprise fleets, rather than individuals.**

70%

SAMSUNG BLACKJACK

PRICE $600 / **CONTACT** SAMSUNG
PHONE 1300 369 600
WEB www.samsung.com.au

The cheekily named BlackJack, which clearly wants to trump the BlackBerry, was a superb smartphone when released this time last year. But 12 months down the track, it's now just a good smartphone. The measly 220MHz processor struggles with the upgrade to Windows Mobile 6, and the 1.3MP camera and outdated USB 1.1 connection to the PC all work against it, as does Samsung's staunch adherence to a proprietary connector for the charger and headphones, instead of the almost standard mini-USB jack. In its favour is a super-slim (1.2cm) profile, a bundled spare battery and drop-in battery charger to minimise downtime, along with 1.8Mbps HSDPA over either the 3G or Next G networks.

PC User says: **Fold on the BlackJack and wait until there's a BlackJack II to up the ante.**

85%

PALM TREO 680

PRICE $550 / **CONTACT** PALM
PHONE 1800 350 535
WEB www.palm.com.au

For Palm OS loyalists, the Treo 680 is currently the only game in town. Unfortunately, it wasn't exactly cutting edge when it debuted in late 2006 and the OS is still very much the same as it was in 2004, although it remains fast and intuitive, something that can't always be said for Windows Mobile. Now it's the start of 2008 and the Treo 680, which was neither exceptionally small nor thin to begin with, has definitely been outpaced and outclassed by its competitors. For example, you're stuck with Bluetooth 1.2 (forget fast laptop connections), a VGA camera and GSM rather than 3G.

PC User says: **If you must have a Palm smartphone, wait for the local release of the Centro, which is like a Palm OS version of the Treo 500.**

PalmTreo 680	Palm Treo 750	Samsung BlackJack	Sony Ericsson P1i
GSM quad-band	3G/Next G, GSM quad-band	3G, Next G, GSM tri-band	3G, GSM tri-band
No	1.8	Yes	No
No	No	No	802.11b
2.5in	2.5in	2.3in	2.6in
Palm OS 5.4.9	Windows Mobile 6 Professional	Windows Mobile 5	Symbian 9.1, UIQ 3.1
SD	miniSD	microSD	Memory Stick Micro
VGA	1.3MP	1.3MP	3.2MP
4	4	3.5	3.5
300	250	250	250

Tech terms

3G Refers to third-generation phone networks, which have data download speeds at 384Kbps (around 250-320Kbps in the real world).

A2DP (Advanced Audio Distribution Profile) This allows two audio channels, typically stereo, to be sent to a Bluetooth device. Sometimes called 'Bluetooth stereo' or 'streaming Bluetooth stereo', and is typically included in Bluetooth 2.0.

Bluetooth The technology for connecting your mobile to accessories such as wireless headsets, GPS devices and laptops.

EDR (Enhanced Data Rate) A common addition to Bluetooth 2.0 that boosts the connection speed from the 720Kbps of Bluetooth 1.x to around 2Mbps.

GSM The standard mobile phone network used in Australia and in most countries around the world, although on several different radio bands; hence the evolution of tri-band and quad-band GSM phones.

HSDPA (High-Speed Downlink Packet Access) The technology used on 3G networks to achieve broadband-class speeds of either 1.8Mbps (HSDPA 1.8) or 3.6Mbps (HSDPA 3.6).

Next G Telstra's national 3G-based network, which uses similar technology to 3G, but at a lower frequency (850MHz instead of 2,100MHz) for better results in the CBD.

Wi-Fi Access to wireless computer networks, most often for high-speed connections to the net at work, home or a public 'hotspot'. 802.11b and g are the most common standards.

PALM TREO 750

PRICE $700
CONTACT PALM
PHONE 1800 350 535
WEB www.palm.com.au

85%

A Best Buy in our 2007 roundup, but a year on nothing has changed except for the lower price tag and an upgrade to Windows Mobile 6 Pro. This puts the Treo 750 up against smaller and slimmer devices with higher-resolution digital cameras. The rest of the Treo 750 recipe remains a good mix for the mobile professional who wants fast 3G connectivity. We still like the five-way navigator (but not the 'bubblet' keys).

PC User says: A great smartphone a year ago, but only a good one in today's market.

60%

HIPTOP SLIDE

PRICE $680 PLUS $30/MONTH DATA / **CONTACT** TELSTRA / **PHONE** 12 51 11
WEB www.telstra.com.au/hiptop

While the hiptop (better known in the US as the Sidekick) is aimed at the youth market, this funky smartphone sometimes catches the eye of the self-employed and home office set. The reason is less about the device than Telstra's unlimited data deal for $30 per month. This includes all emails, web browsing, instant messaging sessions and SMS/MMS messages. However, that's offset by the $680 upfront cost for the slide and the 24-month contract. Worse is that it can't be paired to any Telstra mobile plan, so you're stuck with the standard 30c per 30 second rate, plus 27c flagfall.

PC User says: Business users would be better off with a 'real' smartphone with more flexible calling plans.

_SMARTPHONES WITH ALPHANUMERIC KEYPADS

Smartphones with a regular alphanumeric keypad and more conventional 'candybar' styling make for a comfortable transition from the basic mobile phone. Not everyone needs a QWERTY keypad, nor does everyone want the changes in size and form factor that are needed to put a good keyboard into the customer's hands. Think of it as 'viewing' versus 'doing'. If you're going to be primarily reading email, perusing the odd document attachment and skimming around the web, you're really just viewing stuff. You'd have little need for a QWERTY keypad, which is most needed for writing emails, taking part in instant messenger sessions and the like. We've also taken a look at several PDA-style phones, which have no keyboard at all — just a stylus for tapping numbers and letters on the touchscreen.

I-MATE ULTIMATE 8150

PRICE $1,000 / **CONTACT** I-MATE
PHONE 1300 850 513
WEB www.imate.com

PC USER BEST BUY

85%

Of the many smartphones which promise to replace your laptop for those times when you want to travel light, the Ultimate 8150 comes closest to delivering. The sharp 2.8in display runs at full VGA, so you can view web pages and PowerPoint presentations at a natural-looking full-screen size, although this admittedly does makes everything on the screen quite small. However, with an XGA video out port, you can connect the 8150 to a regular PC monitor for a larger and clearer picture. There's plenty of horsepower, with a 520MHz processor plus an Nvidia GeForce 5500 graphics accelerator, which makes a meal of the Windows Mobile 6 Professional OS. The phone itself covers Next G and 3G, all four GSM bands, as well as Wi-Fi. We like the web-based configuration and security options, which vastly simplify the process of setting up and managing your device.

PC User says: The lack of a GPS receiver is about all you could miss here.

BLACKBERRY PEARL 8120

PRICE $600 / **WEB** www.blackberrypearl.com

BlackBerry is still the king of mobile email and this meaty update to the original Pearl 8100 easily ranks among the best non-QWERTY smartphones. Beyond the fast and seamless way the BlackBerry service handles mobile email, the delightful Pearl 8120 scores with its impressive SureType predictive text software. This also helps you adapt to the unique keypad layout, which parks two letters in QWERTY layout on each number key. But as handy as the Wi-Fi is, it also draws attention to the slow-as-syrup speeds of the browser when you're working over GSM.

PC User says: Really shines for calls, emails and simple diary usage.

80%

80%

NOKIA E51

PRICE $550
CONTACT NOKIA
PHONE 1300 366 733
WEB www.nokia.com.au

If the BlackBerry Pearl is a little too different for your liking, Nokia's E51 is the next best thing. Nokia has had plenty of experience to get its user interface and mobile software right, and the E51 goes from being a conventional mobile phone to a business-savvy smartphone without skipping a beat. Just about everything you want is on the menu. It runs on Next G and 3G, both with HSDPA 3.6, plus Wi-Fi. The bright 2in screen is almost as large as the keyboard and about all that's missing is a front-facing camera, so you can forget about two-way video calls.

PC User says: The E51 is a gem in its own right and it's hard to beat at around $550 on the street.

85%

I-MATE ULTIMATE 6150

PRICE $950 / **CONTACT** I-MATE
PHONE 1300 850 513 / **WEB** www.imate.com

While the i-mate Ultimate 6150 is one of the few remaining PDA-style smartphones, it's also the best we've seen for a long time. The reason? It packs all the features of its big brother, the Ultimate 8150, into a pen-operated device. This means you get the same obscenely fast HSDPA-accelerated 3G, Wi-Fi, video output, web-based configuration, FM radio — the lot. There's even a slightly larger 2.8in VGA screen to soak up the vacant real estate, which is used by the 9150's alphanumeric keypad.

PC User says: Don't need to write a lot of email, but still want just about everything else? The Ultimate 6150 could be the one for you.

85%

HTC TOUCH DUAL

PRICE $800
CONTACT HTC
PHONE 1300 769 669
WEB www.htc.com

The Touch Dual addresses one of the key criticisms of the original Touch by adding a slim slider keyboard, but we didn't like the shiny metallic keypad (overly reflective and smudgy). The TouchFLO interface, which perches atop the Windows Mobile 6 OS, is also faster, more responsive to gestures and has tighter integration into the OS, but there's still a jolt when you leave TouchFLO and go into Windows Mobile 6.

PC User says: Will appeal to style seekers who want a very different smartphone.

NOKIA N95 8GB

PRICE $1,000 / **CONTACT** NOKIA / **PHONE** 1300 366 733 / **WEB** www.nokia.com.au

This upgrade to Nokia's flagship N95 goes beyond the obvious inclusion of an 8GB flash drive for storing music, downloads over Wi-Fi, map data for the inbuilt GPS navigation and one of the best lenses in the mobile phone market (5MP with Carl Zeiss glass). The screen is also slightly larger and looks brilliant in the N95's landscape mode, which also sees it surrounded by multimedia control keys while hiding the normal keyboard. The user interface is also snappier.

PC User says: Could be a bit too much for small business owners, but tech titans will delight in putting all those features to use.

80%

ALPHANUMERIC SMARTPHONES: HOW THEY COMPARE

Model	ASUS P735	BlackBerry Pearl 8120	HTC Touch Dual	i-mate Ultimate 6150	i-mate Ultimate 8150	Nokia E51	Nokia N95 8GB
Band/s	3G, GSM tri-band	GSM quad-band	3G, GSM tri-band	3G, Next G, GSM quad-band	3G, Next G, GSM quad-band	3G, Next G, GSM quad-band	3G, GSM tri-band
HSDPA	No	No	3.6	3.6	3.6	3.6	3.6
Wi-Fi	802.11b/g	802.11b/g	802.11b/g	802.11b/g	802.11b/g	802.11b/g	802.11b/g
Screen	2.4in	2.2in	2.6in	2.8in	2.6in	2in	2.8in
Operating system	Windows Mobile 5	BlackBerry	Windows Mobile 5 Professional	Windows Mobile 5 Professional	Windows Mobile 5 Professional	Symbian 9.2 Series 60	Symbian 9.2 Series 60
Expansion	miniSD	microSD	microSD	microSD	microSD	microSD	microSD
Camera	2MP	2MP	2MP	2MP	2MP	2MP	5MP
Battery - talk (hours)	5	4	4	4	4	4.4	3.5
Battery - standby (hours)	170	360	150	150	150	13	11.5

ASUS P735

PRICE $650 / **CONTACT** ASUS / **PHONE** 1300 278 788 / **WEB** www.asus.com.au

If the i-mate Ultimate 6150 is a little more fully-featured than you need or can justify the money for, try the P735. The brushed metallic design of the solid chassis is subdued yet stylish, it's got 3G (but no HSDPA), Wi-Fi, and a nippy processor. It needs the latter to keep Windows Mobile 5 on its toes. We especially liked the bundled software, which can run optical character recognition on business cards snapped with the digital camera and import them into the address book. This works well, as long as you have good light and a steady hand.

PC User says: If you want a budget-minded PDA smartphone, you'll be drawn to the P735.

Choosing the right data plan

Once you've got a smartphone — or any phone for checking email, searching the web or accessing online services — you'll need to upgrade your mobile phone plan to include a data component. Most off-the-shelf plans are designed for voice and SMS, not data, although some plans include a very small monthly data component.

If you jump online from your phone without choosing a data plan you'll be charged at a 'casual' data rate. This varies between carriers, but Telstra's casual or 'pay as you go' charges of $2/MB are a good benchmark. Optus, on the other hand, defaults customers to its 'light' data plan.

Anyone who buys a smartphone will need to choose a proper data plan to suit their usage. These come in two flavours. The most common is an add-on plan that's piggybacked onto your existing voice-based mobile plan and is based on a set amount of data per month.

These are offered in a range of plans according to your needs, with excess usage fees if you pass the monthly data allowance. For example, Telstra charges $29 per month for its Next G-based 80MB Browsing Pack, with $1/MB for excess usage; Vodafone's $30 Data Bundle covers 100MB with 30c/MB above that.

BlackBerry users can get by with a much lower data overhead because the BlackBerry uses highly efficient data compression: entry-level BlackBerry add-on plans start at 1MB per month. 1MB sounds almost laughable, but it's equivalent to 500 short emails (with no attachments) per month, as each email would be only 2KB.

You can also find some combined capped plans, which bundle together voice and data, usually with quite generous usage allowances. For example, Optus has a $79 per month plan that's very popular with BlackBerry owners, as it includes $300 worth of voice calls and SMS/MMS messages at the standard Optus rates and unlimited use of the BlackBerry for email, web browsing and other internet access.

An exception to all this is Three's X-Series, which is tied to specific handsets but offers exceptional value. The entry-level $12 plan gives you 100MB of email and web browsing, and even use of the smartphone as a 3G mobile broadband modem for your notebook, along with a bonus 200 minutes of Skype-to-Skype calls. The caveat? Keep within the coverage of Three's 3G network, otherwise your call is automatically roamed onto Telstra's GSM network. This not only slows the speed to a crawl but runs up a whopping $1.65/MB surcharge. Fortunately, you can avoid this unexpected sting by disabling network roaming on your handset.

In the table below we've sampled two data plans from each of the four mobile carriers to give you an idea of what's on offer. Check each telco's web site for a full list of plans, but don't rule out resellers such as chains like Crazy John's, as well as PlanetMobile (from Planet ISP) and Think Mobile.

If you're not tied down to any particular carrier, you can easily shop around to find the best deal.

DATA PLANS: HOW THEY COMPARE

Carrier	Optus	Optus	Telstra	Telstra	Three	Three	Vodafone	Vodafone
Web	www.optus.com.au	www.optus.com.au	www.telstra.com.au	www.telstra.com.au	www.three.com.au	www.three.com.au	www.vodafone.com.au	www.vodafone.com.au
Phone	1300 301 937	1300 301 937	12 51 11	12 51 11	13 16 83	13 16 83	1300 650 410	1300 650 410
Plan	BlackBerry $79 Cap	BlackBerry Executive	BlackBerry Individual Solution	$10 Browsing Pack	X-Series Bronze	X-Series Gold	Lite Data Bundle	Mobile Email 30
Type	BlackBerry voice and data combo	BlackBerry data add-on	BlackBerry data add-on	Smartphone data add-on	Smartphone data add-on	Smartphone data add-on	Smartphone data add-on	BlackBerry data add-on
Monthly fee	$79	$30	$30-$40	$10	$12	$30	$29.95	$29.95
Contract	24 months	N/A	24 months	N/A	Depends on handset	Depends on handset	N/A	N/A
Data allowance	Unlimited	1MB	Unlimited	20MB	100MB	1GB	100MB	1MB
Excess usage	N/A	0.5c/KB	N/A	$1/MB	10c/MB	10c/MB	30c/MB	$25
Notes	Includes $300 of voice calls and SMS/MMS messages	Covers around 500 short emails without attachments	Cost depends on which voice plan you are using	Available only on selected post-paid (not pre-paid) mobile plans	Also includes 200 minutes Skype to Skype. X-Series is available only on a limited selection of handsets from Three. $1.65/MB roaming fee applies outside Three's 3G network	Also includes 2,000 minutes Skype to Skype. X-Series is available only on a limited selection of handsets from Three. $1.65/MB roaming fee applies outside Three's 3G network	Approximately 500 emails, 17% with a 1MB attachment	Any excess data incurs 'automatic upgrade' to Mobile Data 50 plan at $25 charge
Best for	Heavy-duty BlackBerry users	Light-duty BlackBerry users	Existing Telstra customers	Medium use of Next G handset	Light-duty email and web within Three's coverage area	Heavy-duty email and web within Three's coverage area	Light-duty email and web	Very light-duty BlackBerry users who will never exceed their 1MB allowance

20-PAGE TROUBLESHOOTING GUIDE

TO THE RESCUE!

Don't let your PC problems get the better of you. This month we look at common tech problems and present expert tips on how to solve or prevent them.

PC User's exclusive rescue disc and OS ..... **Page 44**
Windows XP troubleshooting ..... **Page 48**
Use Vista to save your data from disaster ..... **Page 51**
Fix hardware problems the easy way ..... **Page 54**
Internet connection solutions ..... **Page 56**
Build a network toolkit ..... **Page 60**
Ubuntu Linux problems solved ..... **Page 62**

Our custom-made operating system

If you're after a live rescue CD or a fast, fully featured operating system, we've got a great solution. **Darren Yates** shows off UserOS Ultra, our exclusive new OS.

Linux has really been gaining some serious momentum lately with consumers and PC vendors alike. ASUS uses a customised version of Xandros Linux on its Eee PC and Dell is offering Ubuntu Linux on a range of PCs and notebooks.

One of the reasons for Ubuntu's growing success, apart from the price, is its 'live CD' option — burn the operating system (OS) image to a CD, pop it into your PC's optical drive, boot the PC and up comes a working operating system, right there on your desktop. And you haven't installed anything on your PC's hard drive. It's something that not only makes Windows Vista look like last century's technology and last century's thinking, but it's something that makes Ubuntu a great place to start for a live rescue CD.

However, in fairness, we can't say Ubuntu is perfect either. These days, Ubuntu is a fairly sizeable operating system and, although version 7.10 includes excellent free applications such as OpenOffice.org and the ability to read and write NTFS-formatted hard drives, it lacks some must-have extras. It also needs a reasonably well-featured PC to run — less well-featured than Windows Vista, but a decent PC nonetheless.

_LINUX TO THE RESCUE

Live rescue CDs are nothing new. In fact, there are a few of them on the internet already. They're designed to help you get access to data on a PC whose operating system has carked it. The problem with many of them is that although they often include just about every hard drive tweak tool known to man, they tend to be one-trick ponies — they don't do anything else. Easy-to-use graphical interfaces aren't common either.

While Ubuntu doesn't exactly scream 'rescue CD', the latest version 7.10 comes with one feature that actually makes it an extremely useful rescue disc: the ability to read and write NTFS hard drives. Windows 2000, XP and Vista all use the NTFS file system, so unless you have a working PC with one of these operating systems, you couldn't get stuff off an NTFS hard drive. But by combining NTFS read/write support, a simple-to-use interface and a live CD distribution (or distro), Ubuntu has itself become a great rescue CD option.

If your Windows 2000/XP/Vista PC crashes and you need to get files off one of its drives, all you do is drop in an Ubuntu 7.10 live CD, reboot, plug in a USB drive and, provided the NTFS hard drive is physically still in good nick, copy the files using the Ubuntu Nautilus file manager.

While all of the other tools provided on specialist rescue distros are fine, the bottom line for most of us is that we just want to be able to retrieve our data from the hard drive. The beauty of this strategy is you can achieve both a rescue CD and general-purpose operating system all in the one disc.

_ROLL YOUR OWN OS

Yet another trick Linux delivers that Windows doesn't is the ability to create your own special blend of the operating system. Linux's more modular nature means you can actually create your own Linux operating system with the features and applications you want and leave out those you don't need.

While Ubuntu needs a fairly beefy PC to get into gear, there is a leaner yet less well-known version of it called Xubuntu. Instead of the normal Gnome desktop environment, Xubuntu uses a smaller, less resource-hungry desktop called Xfce. It only needs 128MB of memory to run and delivers a neat, fast desktop environment, even on older PCs.

I'm sure I'll get hammered for this, but, as a very rough guide, if Gnome is the equivalent to Windows XP, Xfce is probably closer to Windows Me in terms of its look. That said, it still has all the latest core features, such as NTFS read/write support, and it will work more easily on older systems. The only problem is that it's a bit lean on choice applications. So we decided to see if we couldn't combine a few of these tricks together and roll our own operating system that's big on features but low on bloat.

On the cover DVD

You'll find the full version of UserOS Ultra on this month's cover disc.

Don't forget to also watch Darren's exclusive video tutorial on how to install UserOS Ultra onto your PC.

_INTRODUCING USEROS ULTRA

We took an axe to Xubuntu and started cutting out what we considered dead wood. We started by removing the language packs, the extra content, games and other non-essentials until we got right back to a lean Xubuntu distro.

We then set about adding in our own features, replacing some apps with equivalents that were leaner in requirements and size but still able to integrate well into the operating system. Finally, we ended up with a live CD distro that included a swag of extras Xubuntu didn't, could run on a PC with only 256MB of memory and could do double-time as a rescue disc and general-purpose operating system.

We called the end result UserOS Ultra. It's our very first *PC User* operating system and we're giving it to you free on this month's cover disc. We gave it the Ultra tag because of its three major attributes: it's ultra-lean, ultra-fast and ultra-featured.

It's ultra-lean because the standard Xubuntu 7.10 distro is 593MB and the regular Ubuntu 7.10 distro weighs in at 703MB. Our judicious slicing and dicing helped us create a live CD operating system with more functionality than Xubuntu but at just

UserOS Ultra features

UserOS Ultra is not only a pretty decent rescue disc but it's also a general-purpose operating system you can use on your PC. Here's a list of the special features we've incorporated.

- DVD home movie playback — VLC
- Audio CD ripper — Sound Juicer
- Music manager — Rhythmbox/GStreamer
- iPod syncing tool — gtkpod
- Email — Balsa
- FTP file transfer — FileZilla
- BitTorrent downloads — BitTornado incorporated into Firefox
- MP3/XviD/AAC/DivX codec support
- Drive partitioning — GParted
- Audio/video conversion — *PC User* RockPod 08
- Video capture/editing — Kino
- Audio recording/editing — Audacity
- Image editing — Xara Xtreme

Plus, UserOS also comes with Xubuntu's standard features such as a word processor (Abiword), spreadsheet (Gnumeric), disc burning tool (Brasero) and web browser (Firefox).

470MB — one-tenth a single-layer DVD-recordable disc.

The ultra-fast comes from the Xfce desktop environment, which not only gives the OS a clean and easy-to-use feel but also gives it extra zip over Gnome. It has significant zip when run on a fairly new-model PC, but it can also be used on older, slower PCs.

_NEW FEATURES

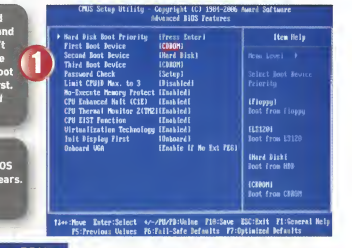
What really makes UserOS Ultra a very useful operating system is the features we've added to it. It is here we started to have fun and get creative.

Xubuntu already comes with basic features, such as Firefox web browsing; however, because of licensing issues, there are quite a few extras missing, such as DVD movie playback and support for XviD, MP3 and other 'must-have' codecs. We added these in but went further by adding in extras such as video editing, BitTorrent download support and our very own *PC User* RockPod 08 audio/video conversion tool (released in our December 2007 issue). Check out the box above to see the list of all the extras you'll find in UserOS Ultra.

stepbystep RESCUE DATA FROM AN XP PC

Insert the CD you burned with UserOS Ultra on it and reboot. If your PC doesn't start UserOS Ultra, make sure the BIOS is set to boot from the optical drive first. Check your motherboard manual for details.

1



Click on 'Start or Install Xubuntu' when the UserOS Ultra splash screen appears. This loads the OS into memory only.

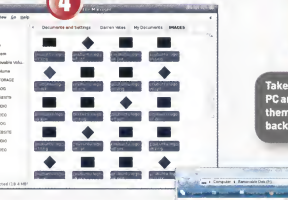
2

Once the operating system is up, you should see any available working hard drives mounted on the desktop. RAID 1 drives will appear twice but may not be accessible.

3

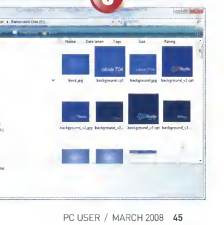
Install your external USB drive. As it appears, navigate to your PC hard drives for the files you need and copy them to the USB drive.

4



Take those files to another PC and continue working on them or burn them to disc for backup/archive purposes.

5



UserOS Ultra requirements

UserOS Ultra has quite modest hardware requirements and will work on a PC with a 233MHz Pentium MMX or better CPU, 192MB of RAM and 4GB hard drive. However, some advanced applications such as video editing may not work well on that hardware. We'd recommend at least a 500MHz CPU, 256MB of RAM and a 10GB hard drive for better performance.

UserOS Ultra 7.10 is freeware, so you can use it in any legal way you wish. However, it comes with no warranty whatsoever, so use at your own risk. We cannot provide support but, because it's based on Ubuntu 7.10, there are plenty of web sites where you can find help including **http://xubuntu.org/help**, **http://ubuntuforums.org** and **https://wiki.ubuntu.com/Xubuntu**.

_GETTING RESCUED

The first thing we recommend you do is take the cover disc, grab the UserOS Ultra ISO and burn it to CD. Make sure you choose to burn an ISO image in your burning software's options.

When your Windows (or Linux) PC crashes beyond all help and won't start, reboot the PC with the UserOS Ultra disc in the optical drive. Make sure the motherboard BIOS is set to boot from the CD drive first and allow UserOS Ultra to load up. All it'll do for starters is load itself into memory but, provided the hard drive is physically still able to work, you should find the drive(s) mounted on your UserOS Ultra desktop once the OS loads. Double-click on the hard drive and it should appear in the Thunar file manager. Next, plug in an external USB drive and it should also appear in the file manager. Now all you need to do is copy the files from the dodgy hard drive to the external drive.

One word of warning, though: while this method works for IDE and SATA hard drives, it won't work for hard drives that have been configured as RAID (redundant array of independent disks). You can see the drives under the Thunar file manager, but you can't access the data on them. For standard PCs, however, this should still work perfectly well. Once the files are copied over, you can load the external drive into another PC and hopefully pick up where you left off, although it doesn't necessarily fix the hard drive problem.

While many rescue CDs have lots of extra tools for different file systems and editing hard drive partitions, that's certainly not something we recommend the average user start mucking around with. That said, we've incorporated Gparted, the Gnome Partition Editor — probably the best hard drive partition editor around. We recommend that only more experienced users play around with the partitions.

Rescue CDs won't actually rescue your OS or the whole PC, but they are a great tool for rescuing your files. It might keep you from losing a precious assignment or other piece of work that can't be re-created easily.

_GETTING STARTED

If you're looking for more than just a rescue disc, UserOS Ultra is also a great OS in its own right. Lean and feature-rich, it will run well on most PCs and deliver features few of the big distros offer.

Installing UserOS Ultra onto a PC's hard drive is pretty easy. First, boot up your PC with the UserOS Ultra disc in the drive. Once you've reached the desktop, double-click the Install icon and begin following the prompts. If you've installed a Windows operating system before, installing UserOS Ultra is only marginally different. The difference is that it already contains driver software for a range of hardware, including most motherboards. If you have an ATI or Nvidia graphics card, you'll get to a working state; for 3D gaming, you'll need to access the graphics drivers via the internet.

During the installation, you'll get to a point where UserOS Ultra/Xubuntu wants to start installing language packs. These aren't strictly necessary and you can save yourself plenty of time by hitting the Skip button on the window. Once the installation process is complete, just click the 'Restart Now' button and, when commanded, remove the UserOS Ultra disc from the drive. When the PC restarts, you'll be greeted with the Xubuntu splash screen and given various options to start. All you need to do is press Enter and Xubuntu will start up.

Xubuntu cleverly sets everything up, so if you have your broadband connected, just start up Firefox and you'll be surfing your way around the web. The email client, Balsa, needs to be set up with your details, but that's no different to setting up Outlook or Thunderbird.

If you're using a PC with integrated graphics, the great thing is there's no driver software to install — Xubuntu does everything for you and you're ready to start computing on your new operating system.

Getting graphics cards to work

Because of its built-in driver support, you won't need to install any device drivers into UserOS Ultra for motherboards with integrated graphics. However, for ATI and Nvidia graphics cards, you may need Linux drivers to get the best performance. For Nvidia drivers for Linux, visit **http://tinyurl.com/2t3jg8**; for ATI drivers, go to **http://tinyurl.com/y8dkw6**.

_THE FUTURE

We'll be updating UserOS Ultra each time Canonical releases a new version of Xubuntu, which is typically every six to nine months. We'll always aim to keep it lean and light, but still look to include useful extras you won't find on other distros.

At the moment, UserOS Ultra is one of the world's smallest Ubuntu-based operating systems, but it's certainly not lacking for features. We're also looking at some other exciting UserOS distro ideas that we hope to try in the following months. With the ability to create your own version of Linux, the options are really only limited by your imagination.

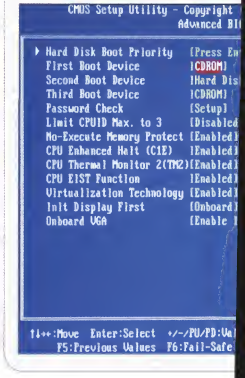
In the meantime, if you're keen to build your own computer, but don't want to spend money on an operating system, give UserOS Ultra a whirl. You might just find the bargain you were looking for.

What would you like?

Here's your chance to get your ideas into the next version of UserOS Ultra. Notwithstanding our aim to keep UserOS Ultra a slim OS, if you have ideas for apps you'd like to see in the next version of our operating system, send us an email at **pcuser@acpmagazines.com.au**. We can't guarantee we'll be able to add every suggested app, but we'll look at all options.

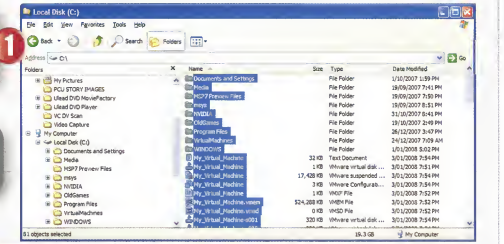
stepbystep INSTALL

Thanks to its Xubuntu base, UserOS Ultra will run on older systems with as little as 192MB of memory. While UserOS Ultra is a 470MB ISO image on the cover disc (make sure you read the 'Burning the rescue CD' tutorial on the cover DVD), it expands to 1.5GB when installed on your hard drive. So, we recommend a minimum of a 10GB hard drive, just to give yourself some room. Installing UserOS Ultra is quite simple, but here's a guide to what you'll need to do.



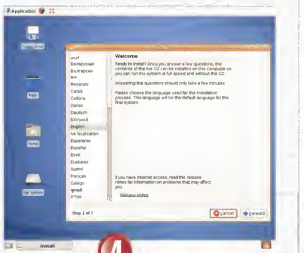
USEROS ULTRA ON AN OLDER PC

Back up any data you may want to keep from your old PC's hard drive. This installation procedure will assume you plan to use the whole hard drive for installation.



Set the BIOS to boot from the optical drive. This will likely be the one limitation that prevents really old PCs from running the live CD.

Load the UserOS Ultra live CD you burned from the cover disc and reboot your PC. Choose 'Start or Install Xubuntu' from the list on the UserOS Ultra splash screen.



Once the operating system is up and running, click on the Install icon on the desktop and follow the prompts. (Make sure you watch my video tutorial also on this month's cover disc.) Once the operating system is installed, remove the disc and reboot. Your PC will then come up with UserOS Ultra installed and all applications ready to run.

WEB CREATOR 4 PRO

The powerful web authoring tool for creating breathtaking websites

Web Creator 4 Pro is the perfect tool for designing professional looking websites whether it be your own personal one or websites for any association or business - it has all the features you will ever need for creating, personalising and publishing your website!

NO PROGRAMMING EXPERIENCE REQUIRED

Available at

Harvey Norman Officeworks harris technology

& Selected Retailers

Repair with a reboot

Link Harris explains how to build and burn a bootable rescue CD to troubleshoot and repair your PC.

On the cover DVD

On this month's cover disc, you'll find UBCD4Win 3.1.10a as well as three videos covering how to install and use the program.

If your PC won't boot, but you need to work from Windows to track down and turf out the troublemaker, UBCD4Win from **www.ubcd4win.com** can conquer that catch-22. UBCD4Win, which stands for Ultimate Boot CD for Windows, is a mini-installation of XP that boots from a CD or DVD and includes a swag of free software tools for PC troubleshooting, restoration and repair. The tools can tackle malware and problems with your network, passwords or registry. There are also browsers and email clients, burners, drive cloners, undeleters and a Remote Desktop client.

_HOW IT WORKS

Although the programs included are modified to run primarily from the CD — called drive X: (SYSTEM DRIVE) — most need to access some files on a hard disk. To avoid using your existing hard drives, UBCD4Win creates a 100MB RAM disk (a chunk of your PC's RAM used to simulate a hard disk) that's usually called drive B: (TEMP).

The first time you start a program, UBCD4Win copies essential bits from the CD to drive B:. That's also where new signature updates for antivirus programs are stored, for example. Of course, since that data is actually stored in RAM and not on a hard drive, you lose it when you shut down or restart your PC. Also, as you run various programs, drive B: will fill up. To deal with this, there's a Start menu option 'Clear Ram Drive' that removes everything added since UBCD4Win started.

_BUILD AND BURN

The software used to create a UBCD4Win disc is called UBCD4Win PE Builder, where PE stands for Preinstallation Environment, a term adapted from Windows PE (**http://tinyurl.com/zxhof**). The main steps are:

1. Extract essential XP files from your XP CD. This is necessary to fulfil Microsoft's licensing requirements.
2. Integrate the tools, which is accomplished by enabling a plug-in for each tool you want to build into the PE.
3. Create a bootable ISO (disc image file) of the PE.
4. Burn the ISO to disc.

_SLIPSTREAM

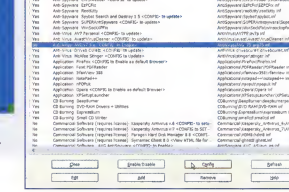
The XP installation files must incorporate Service Pack 1 (SP1) or better, and your XP CD may already meet this requirement. If not, UBCD4Win PE Builder lets you integrate files from a Service Pack with the files from your XP CD. This process is called slipstreaming and is illustrated in the step-by-step guide opposite. Note that the Service Pack used for PE Builder doesn't have to match the one applied to your installation of Windows XP.

You should organise your XP files before trying anything else with PE Builder. Although PE Builder will read from optical drives, the software's author recommends avoiding that for either slipstreaming or building. Instead, you should use My Computer to copy everything from the XP CD to a temporary folder on your hard disk. And, if you intend to slipstream, copy the Service Pack CD to a different folder.

If you follow this advice, the slipstreamed version of XP will end up in the temporary folder you created for the XP CD. However, if you opt to read from the XP CD during slipstreaming, the slipstreamed version of XP ends up in the C:\UBCD4Win\win-slipstreamed\ subfolder of the UBCD4Win installation.

UBCD4Win offers a swag of software to troubleshoot and repair most PC problems.

Figure 1. You need to configure some plug-ins before you can enable them.



_TOP TIP

Service pack secrets

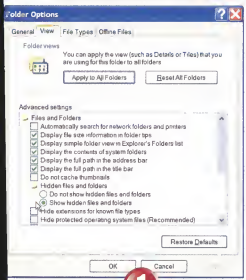
If you don't have the source files for a suitable XP Service Pack, you can download SP2 from **http://tinyurl.com/3uqjr**. Be sure to use the link 'Download and deploy SP2 to multiple computers'. Expand the archive by typing **<path>\WindowsXP-KB835935-SP2-ENU.exe -x** into a Run box and pressing Enter. If your internet account can't cope with that 266MB download, click 'Order the CD' instead to receive the expanded archive on CD by post for $6.60.

_SIZE DOES MATTER

You'll need to budget for several gigabytes of hard drive space during the install, slipstream and build processes. The UBCD4Win default installation occupies about 450MB, the XP files about 500MB and another 500MB for the SP2 files, plus 266MB for the archive if you download it. Slipstreaming SP2

stepbystep SLIPSTREAM XP SP2

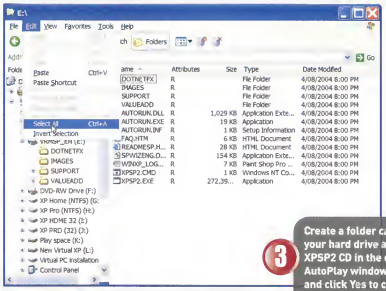
UBCD4Win PE Builder lets you integrate files from a Service Pack with the files from your XP CD. Here's how the process works.



1 Open My Computer and click Tools —> 'Folder Options' —> View tab. Select 'Show hidden files and folders', untick 'Hide protected operating system files (Recommended)', click Yes to clear the warning box and click OK.

Create a folder called XPCD on your hard drive and pop your XP installation CD in the drive. When the AutoPlay menu appears, click 'Perform additional tasks' —> 'Browse this CD'. Select all of the files and folders and copy them to XPCD.

2

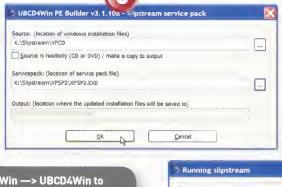


3 Create a folder called XPSP2 on your hard drive and put your XPSP2 CD in the drive. Close the AutoPlay window when it appears and click Yes to confirm the exit. Open My Computer, right-click the CD drive and select Explore. Then, select all of the files and folders and copy them to XPSP2.

4 Go to Start —> 'All Programs' —> UBCD4Win —> UBCD4Win to open UBCD4Win PE Builder. If this is the first time you've opened the program, click the 'I agree' button to accept the terms of the EULA. This applies to PE Builder and all of the applications included with the supplied plug-ins. Click No to the 'Search for Windows installation files?' box. Then, click Source —> Slipstream.

At the Source field, browse to the folder XPCD and click OK. In the Servicepack field, browse to the folder XPSP2, double-click it, select XPSP2.exe and click Open. Then click OK.

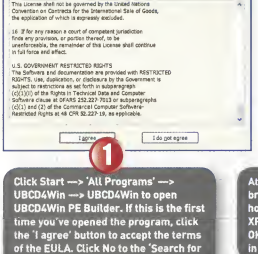
5



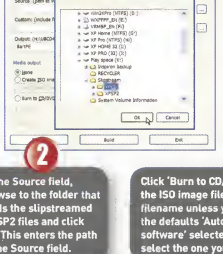
Click OK to clear the 'Integrated install has completed successfully' box. Check to see that the final entry in the 'Running slipstream' window is 'Process stopped' and click Stop to close the window.

6

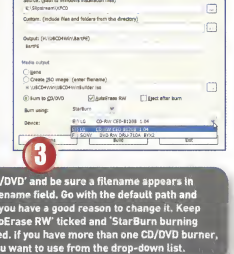
stepbystep CREATE A BOOTABLE RESCUE CD



1 Click Start —> 'All Programs' —> UBCD4Win —> UBCD4Win to open UBCD4Win PE Builder. If this is the first time you've opened the program, click the 'I agree' button to accept the terms of the EULA. Click No to the 'Search for Windows installation files?' box.

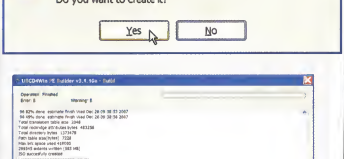


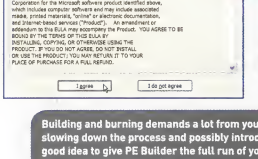
2 At the Source field, browse to the folder that holds the slipstreamed XP SP2 files and click OK. This enters the path in the Source field.



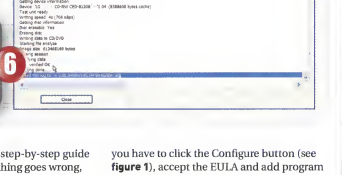
3 Click 'Burn to CD/DVD' and be sure a filename appears in the ISO image filename field. Go with the default path and filename unless you have a good reason to change it. Keep the default's 'AutoErase RW' ticked and 'StarBurn burning software' selected. If you have more than one CD/DVD burner, select the one you want to use from the drop-down list.

4 Pop a writable CD in the drive and click the Build button. Click Yes to have PE Builder create the BartPE folder, which is where the UBCD4Win files will be assembled for the .iso file.





5 This EULA is for Windows XP and clicking the 'I agree' button is a requirement for grabbing the Windows files that PE Builder needs for the bootable rescue CD.



6 Building and burning demands a lot from your CPU. To avoid slowing down the process and possibly introducing errors, it's a good idea to give PE Builder the full run of your PC while you wait. When the final line says 'Saved this log to', check that there are no reports of errors and that the line 'Data verified OK' is present. Click the Close button and reboot your PC to test the rescue CD.

increases the size of the contents of the XP folder to 576MB. The default PE build (default folder C:\UBCD4Win\BartPE) is about 585MB, as is the corresponding ISO, which is created in the C:\UBCD4Win folder.

_PLUG-INS

I strongly recommend that you build your first ISO and burn it to disc before messing with the plug-ins (see the step-by-step guide above). That way, if something goes wrong, you won't have to wonder whether changes you made are the cause.

After that, it's a good idea to select each antivirus and antispyware plug-in and click the Configure button to download the latest signature updates before doing your next build. For AVG Anti-Virus Free Edition 7.5, you have to click the Configure button (see **figure 1**), accept the EULA and add program files, and then click the 'Enable/Disable' button to enable the plug-in.

_NETWORK SETUP

For tips on setting up a network from UBCD4Win, see page 60 and the Part 3 video on this month's cover disc.

Avoid Vista disasters

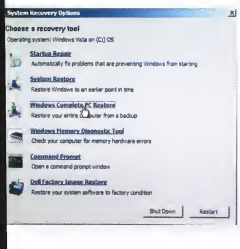
Rose Vines explains how you can protect your data in Microsoft's latest OS.

There are two types of computer problems: those you can fix and those you can't. Problems in the latter category may be minor or they may be catastrophic, ranging from a single file corrupted to an entire system gone belly up. There's only one way to deal with an insoluble problem: prepare for it. Backing up your data is preparation for the blow that *will* strike. With a recent backup in hand, even a distressing event such as a hard disk failure may end up as no more than a hiccough in your routine.

If you've been computing for any length of time, you've probably experienced that frisson of fear when you realise your data is gone. If it's well and truly gone, and no amount of tinkering or workarounds can resurrect it, your only hope is to have a recent backup.

Vista comes with an impressive array of backup tools. It not only lets you back up files and folders, it also gives you the power to restore previous versions of files, roll back your system to an earlier state and create a backup of your entire PC — operating system, applications, settings, documents and all. You can perform backups manually or, if you're smart, set the system on auto-pilot and have Vista do the work for you.

It's defence in depth. If one backup solution doesn't rescue you from your predicament, another one probably will.



To restore a system image, you'll need to use Vista's 'System Recovery Options' in the Recovery Console.

_TOP TIP

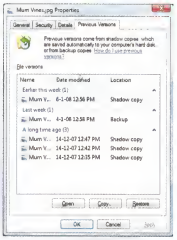
Don't meddle with backup images

Vista stores complete PC backups in a folder called WindowsImageBackup. Don't mess with this folder! It's not mentioned anywhere in the documentation, but if you alter anything within the folder or merely change its name, you won't be able to access your backup if things go wrong.

_THE FIRST LINE OF DEFENCE

Creating backups of your files is your first line of defence. It protects you on those occasions when you accidentally delete or (usually worse) overwrite a file, or a file becomes corrupted, or you simply need to clear space on your working drive. Vista centralises most of its backup functions in the new Backup and Restore Center, and it's there you'll find Vista's new File Backup program. To open the Backup and Restore Center, click Start, type **backup and restore** and press Enter.

To back up your files, click the 'Back up files' button. If you're familiar with the old MS Backup program — not a particularly pretty utility in appearance or function — you'll see that Vista's File Backup is entirely different. It's a wizard-driven application with not many options. It doesn't give you the chance to select individual files or folders to back up; instead, you choose the categories of files you want backed up and Vista backs up *all* matching files. Those categories include pictures, music, videos, email, documents; TV shows recorded with Windows Media Center; and .zips, .cabs and other compressed files. You also have the chance to back up 'additional files', a catch-all that ensures files Vista doesn't recognise are included in your backup.



Messed up a file? Restore a previous version with a right-click.

Although less flexible than the previous backup program, Vista's approach certainly makes backing up easy. Most people will find Vista Backup works well; experienced users who are irked by the lack of control may want to resort to manually copying particularly important files and folders.

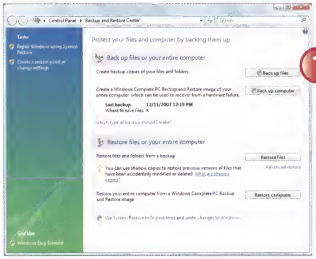
_WHICH FILES GET BACKED UP?

The category approach to backing up simplifies things, but it doesn't make it at all clear exactly which files get backed up. For example, the Back Up Files wizard indicates that the Pictures category includes JPGs and PNGs and the E-mail category includes Outlook .pst and Windows Mail .eml files. But what about BMPs, TIFs and Thunderbird mail? There's nothing in the documentation to let you know whether these files are included.

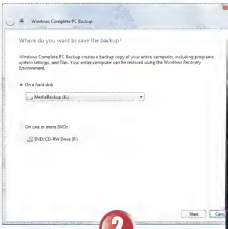
The backup categories are based on a combination of file extension (.png, .mp3, .pst and so on), MIME type (an internet standard for handling different types of content) and application association. That should mean that if your default email program is Thunderbird, your Thunderbird mbox and .msf files will get backed up, even though the mbox files use no file extension.

Unfortunately, one of the features missing from Vista is the in-depth file association editor available in previous versions of Windows, so that makes it hard to determine which files fall into a particular category. You can see a summary of file associations by opening 'Control Panel' —> 'Default

stepbystep CREATE A BACKUP

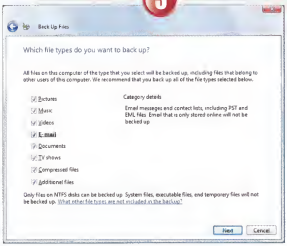


1 From the Backup and Restore Center, click the 'Back up files' button. The first time you do this, the Back Up Files wizard is launched. If you've already used the wizard to create a backup, clicking the 'Back up files' button initiates an immediate backup using your existing settings. In that case, to launch the wizard you must click the 'Change settings' link and, in the 'Backup Status and Configuration' dialog, click the 'Change backup settings' button.

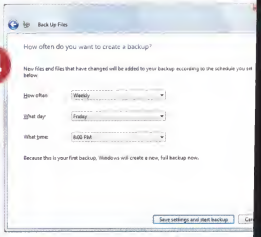


2 Select the location for your backup. You may back up to a hard disk, CDs, DVDs or a location on a network. You can't back up files on a drive to that same drive, nor can you back up to the system drive (where Windows is installed), a tape drive, USB flash drive or a network share on a computer running XP Home Edition.

3 Select what to back up. If you have more than one disk or multiple partitions, choose which of those you want backed up and then select the categories of files you want to back up. To create a backup of all your data, select all the categories.



4 Set a schedule for your backup. For most home users, a weekly backup is sufficient. For office use, a daily backup is safer. Remember, you'll need to ensure your computer is switched on at the scheduled backup time and that the backup media is attached. For example, if you're backing up to an external USB drive, it must be connected and powered on. Note that the backup program is smart enough to be able to save data, even if the file is open. Click 'Save settings and exit'. If this is your first time using the wizard, a backup will be created immediately.



_TOP TIP

Back up externally

The best investment you can make to ensure the safety of your data is to buy an external hard drive. These drives are inexpensive, they provide plenty of room for multiple backups and they're portable, making them safer, more secure and usable on more than one machine.

Programs' —> 'Set Associations', but it isn't much help when you're trying to figure out what will get backed up. The solution is to tick the 'Additional files' option when you're creating your backup settings. This will ensure all files except program and system files will be included. It's clunky, but better than discovering too late that an important document didn't make it into the backup.

The first time you perform a backup, every file in the selected categories will get copied to the backup location. The files are copied in standard ZIP compressed format; that means you'll be able to manually extract a file from the backup without using the Vista Restore utility. Subsequent backups are incremental: only the files that have changed since the last backup are included, so after the initial large and time-consuming backup, subsequent backups should be fairly quick and require much less space.

_THE SECOND LINE OF DEFENCE

Between the extremes of losing a file and having your hard disk fail completely, there's a variety of medium-scale setbacks you may encounter. Previous Versions and System Restore come to your aid on these occasions.

Previous Versions lets you recover an earlier version of a file: invaluable when your latest editing attempt has caused more harm than good, or when you want to compare an original with the current version. System Restore takes snapshots of your system at intervals and then lets you roll back your system to a previous state, restoring applications and the operating system to their former settings. This can get you out of a pickle if your system becomes unstable. If you used System Restore in Windows XP or Me and found it less than reliable, don't be put off: System Restore in Vista is a vastly

improved animal. It's more efficient and reliable, and well worth using.

To revert a file to a previous version:
❶ Right-click the file and select 'Restore previous versions'.
❷ In the Properties dialog box you'll see a list of all saved versions of the file. To determine which is the version you need, click one of the copies and then Open.
❸ Once you locate the correct version, click it, click Restore and then Restore once more at the warning prompt. The file you select will overwrite the current version.

If you want to keep both the current version of a file and recover a previous version, instead of clicking Restore in step 3, click Copy and select a location for the recovered file. You can also right-click a folder and select 'Previous Versions' to see a list of all files within that folder for which previous versions are available.

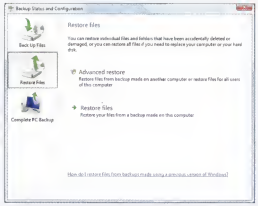
Previous Versions works hand in hand with System Restore, so make sure you have System Restore enabled (the default setting) to take advantage of this feature. Each time System Restore creates a snapshot of your system, known as a restore point, it creates 'shadow copies' of your changed files. If you take a look at the list of previous versions available in a file's Properties dialog box, you'll see under Location that some are labelled 'Shadow copy' and others 'Backup'. Because Vista creates a system restore point each day, you're likely to have more shadow copies of a file than old versions stored in a backup. And, unlike a backup, you don't need to have the backup disk available, because shadow copies are stored on the same drive as the original. So, ensuring that System Restore is turned on is your best guarantee of being able to recover the version you want.
❶ Click Start, right-click Computer and select Properties.
❷ In the System Explorer, click 'System protection' in the task pane.
❸ Place a tick beside each drive you want protected by System Restore and click OK.

THE THIRD LINE OF DEFENCE

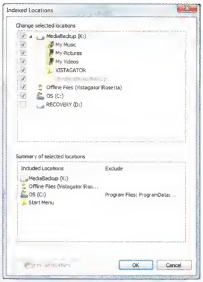
Sometimes things go really bad. You load your system to the gills with beta software and everything gets out of whack. You suffer a spyware infestation. Your hard drive fails. A disk controller goes berserk and scrambles the file system. When your system is a shambles, Complete PC Backup can help you get back on your feet with a minimum of fuss. Available in Vista Ultimate and Vista Business, Complete PC Backup creates a snapshot of your entire system: Vista itself; all installed applications, utilities and drivers; all settings; and your documents. When disaster strikes, you can restore this backup and transform your system to its pre-catastrophe state in short order.

To make the most of Complete PC Backup, you should use it when you first get your computer set up, so you have a clean, problem-free image of your system. Install your regularly used programs and their updates, adjust Windows settings to your needs and then perform the system backup. You should also use it in conjunction with regular file backups. That way, if you need to restore your system, you can use Complete PC Restore first and then restore all your documents using your most recent file backup. You should also create new system images every six months or so — providing your system is still problem-free and responsive — to have an updated image on hand. You can then use the most recent image to get your system back up and running with all updates in place.

You can create a complete backup either on a hard drive (internal or external) or on one or more DVDs. If possible, opt for a hard drive, preferably external, to avoid the hassle of dealing with a handful of DVDs.



Advanced backup options let you restore data from one computer to another.



Make it easy to search for files on your backup drive by adding the drive to the list of indexed locations.

_TOP TIP

Run a trial restore

There's nothing more frustrating than having a backup and then finding you can't use it during an emergency. Make sure that when you create a backup, you run a trial restore. For a file backup, use the 'Restore Files' button in the Backup and Restore Center and try extricating a file or two from the backup set. To test a complete PC restore, follow through all the steps to ensure your system can recognise the backup, but don't click Finish unless you really do want to replace your existing system.

To create a Complete PC Backup:
❶ Make sure your backup media is available.
❷ Open the Backup and Restore Center and click the 'Back up computer' button.
❸ Select the location for your backup, confirm the settings and click the 'Start backup' button.

RESTORE YOUR SYSTEM

To restore your computer using Complete PC Backup, you'll need to use Vista's 'System Recovery Options', accessible either by booting your computer from a Vista installation disc or by rebooting and pressing F8. To restore using your Vista install disc:
❶ Make sure your backup image is available.
❷ Insert the Vista disc and restart your system.
❸ Choose your language settings and then click 'Repair your computer'.
❹ Select your operating system from the list.
❺ From the 'System Recovery Options', click 'Windows Complete PC Restore' and follow the prompts. If your backup image is on DVDs, insert the last disc first when prompted.

To restore without the Vista install disc:
❶ Reboot your computer and press F8 repeatedly before the Windows logo appears, to display the 'Advanced Boot Options' screen.
❷ Select 'Repair your computer', press Enter.
❸ Select your keyboard layout and click Next.
❹ Log on with your Administrator password.
❺ Click 'Windows Complete PC Restore'.
❻ Select the location from which to restore, click Next and then Finish.

Note that unlike third-party imaging software such as Norton Ghost or Acronis TrueImage, Complete PC Backup and Restore does not let you restore individual files and folders. It's designed to be used for a complete system restore only.

WARNING!

Choose your Vista version

Not all versions of Vista provide the complete set of backup tools. Complete PC Backup and Restore is only available in Vista Ultimate and Vista Business. Vista Premium supports backup scheduling; Vista Basic lets you create backups, but doesn't support scheduling.

Help for your hardware

Darren Yates explains some techniques for keeping your PC or notebook out of trouble.

The vast majority of PC problems actually relate to software issues rather than hardware. PC hardware, with the exception of hard drives, is a bit like your average telly — if it works for a month, it'll work for years.

In fact, the only trouble I've ever had with PC or notebook hardware over the last 20 years has had to do with hard drive failures. We ran a story about a year or so ago about the discovery of faulty/dodgy capacitors causing some motherboard failures, although for the most part, PC and notebook hardware is pretty reliable.

Of course, that's not to say that hardware doesn't have problems. In fact, because the problems are rare, it can be tricky to spot them, let alone figure out how to fix them.

_PC TROUBLESHOOTING

Occasionally, your PC could start giving you trouble for no reason — components and parts have a lifespan and, on occasion, those components can just give out. However, in my experience, problems typically develop after you've had a go at tweaking something. Either you've just added a hard drive or swapped a CPU for a faster one. PC hardware problems don't often occur on their own.

You have to think of your PC as you would your car. Although few of us do it, we're all taught to give the car a 'once over' before we drive it, just to make sure there's nothing obviously wrong with it. We need to do the same thing with PCs to ensure simple things like making sure cables are secure and that you have good airflow around the case.

Prevention is always less painful than the cure, so checking your gear and backing up your data will be far less demanding than rebuilding your PC.

_UPGRADES

Many faults occur around the time we carry out upgrades, so do one thing at a time. Don't try to make a hundred different changes to your PC at once — chances are something will go wrong and you've got to figure out which of those changes caused the problem.

If the upgrade is a motherboard, you've often got little choice but to make several changes at once. However, minimising the changes you make before you test that it actually works is the smart move.

_WHY WON'T IT BOOT?

One common problem is that your PC just won't boot. A PC boot failure will almost always come down to one of the following reasons: a problem with the graphics card, the CPU, the memory, the hard drive or a combination of the four.

If your PC fails to even get to the POST (Power On Self-Test) screen, chances are it's to do with the component you changed last. For example, if you've just added a new graphics card and the PC won't boot, it's likely the card isn't getting the correct boot sequence signals from the motherboard to tell it to switch on. Either the card or the motherboard may need a BIOS update to fix the problem.

If you've just changed the CPU, the chances are the motherboard doesn't know what the CPU is and won't switch anything on as a result. Of course, the CPU could be faulty, but to start with, you need to ensure the motherboard BIOS is the latest version before you change the CPU and that the board supports the new CPU. If you're sure it does and you have the latest BIOS, then you can start questioning the CPU's worthiness.

If your PC gets to the POST and gives you a screen, but then hangs, you have to look a bit deeper. Problems here can be the result of incorrect clocking (or overclocking) of the CPU, memory or frontside bus (FSB). It could be the result of damaged memory or it could be a hard drive fault.

The first thing you do at this point is to make sure you're using the CPU, graphics card and the motherboard's FSB at the clock speeds intended. That eliminates anything stupid. Next, make sure that the memory is OK. Typically this shouldn't be a problem if you've used this memory before. A good motherboard should be able to tell you if there is a problem with memory during the POST when it gets to that point, but you need to be able to rule it out as a possible problem.

_TOP TIP

No Vista support

While Microsoft crows about its thousands of pre-packaged device drivers in Windows Vista, not all Windows XP-era peripheral devices will work on Vista. You may find that a device that worked on XP isn't supported on Vista. It will be up to the device manufacturer as to whether driver software is available.

If you've been mucking around with the hard drives, this is the most likely cause of problems; however, you need to knock out everything else as a possible cause before you get here. While it's pretty hard to muck up a SATA drive installation these days, getting the jumper settings mixed up on IDE drives is an easy thing to do. The answer here is simple: if you have two drives on the same IDE cable, one has to be set to Master and the other to Slave. To get things working, it doesn't matter which is which — just make sure they're not the same.

Where it is easy to muck up a SATA drive installation is in the cables themselves. Quite frankly, the design of the SATA connectors is an absolute shocker in my book, as they fall off far too easily. While there's little to be done with the power connector, the only SATA data cables I'll use are the Gigabyte ones that have the built-in locking spring.

Once you get past all of these issues, you should get to the point where the PC hardware is at least powering up. From here, it becomes more an interaction process where you have to get the operating system and the hardware to talk to each other via the driver software, although that's another issue altogether.

If your PC still fails to boot up, you may need to look at swapping the power supply unit for another to see if that's the problem.

_TROUBLESHOOTING NOTEBOOKS

Notebook PCs are a different kettle of fish because they're typically a finished item with few user-upgradable parts. Apart from the memory and hard drive, there's little you can do to upset things. However, that's not to say things can't go wrong.

The most important thing is getting to know your way around the notebook BIOS (Basic Input/Output System). The BIOS setup of a notebook is typically less tweakable than that of a desktop motherboard, but the BIOS controls most of the peripheral features such as Wi-Fi,

boot priority and the like. Any time a hardware problem develops, go straight to the BIOS first to make sure that all the bits are still switched on.

Again, given that upgrades are often a cause of problems, you need to make sure that the parts you install are compatible with your notebook — that means checking you've got the right memory and hard drive. I once had a 500MHz Pentium III notebook that used SDRAM. I bought a 128MB stick that was supposed to be compatible, but it wouldn't work. It turned out the notebook needed a specific type of SDRAM. Thankfully, DDR and DDR2 memory modules used in today's notebooks are more compatible and problems occur less often, but you still need to be careful.

The other issue with notebooks is the fact that they get lugged around. Try to avoid moving your notebook while it's powered up, as sudden movements could cause damage to the hard drive.

_USB WON'T WORK

Another typical problem with notebooks is peripherals and external devices not working.

With the demands being placed on USB ports, it is actually possible to burn these out if you're not careful. Given some of the stupid peripherals coming out at the moment (like the USB cup warmer), it takes little to blow them up. The USB port is designed to provide only a small amount of power to an external device. Exceeding that power capacity can damage the port and cause issues.

Ideally, devices like external USB hard drives should use a second power source if the device accepts one. Many USB hard drives require too much power from a single USB socket to work. The drive will continually spin up and down as the power is switched on and off by the USB port, as its maximum load is exceeded. Using a second USB port to provide power will reduce problems and lengthen the life of both the drive and the ports.

Hardware components can simply die once their lifespan has been reached, but ensuring good connections and conservative use will help gain you the maximum life from these devices.

_POOR BATTERY LIFE

The other common hardware problem is poor battery life. Sometimes this can be fixed; other times it can't. Many of the sub-$1,000 notebooks from 2006 and earlier were sold with low-capacity batteries as a way of keeping the price down. Unfortunately, this can result in poor battery life.

However, problems can develop, even with standard-capacity batteries. We all heard about the debacle with notebook batteries manufactured by Sony a couple of years ago (manufactured between 2004-2006), where a number of batteries were faulty and in danger of spontaneously combusting.

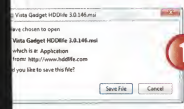
Windows Vista notebook owners are likely to be finding battery life a problem for another reason: the Aero interface. Aero uses DirectX 9 graphics and major brands such as HP and Lenovo have reported significant gains in running time when Aero was disabled.

The other problem affecting battery life is the number of gizmos that notebooks now include: Wi-Fi, Bluetooth, DVD burners and peripheral ports all consume power. You have to think of your notebook battery as a fixed power source. It has only so much power and, the more devices you switch on, the faster that fixed source will be drained. So, apart from various CPU tricks, you really need to shut down or slow down components in your notebook in order to boost the battery life. Things like dropping the hard drive power-down time, reducing the screen brightness, turning off FireWire and PC Express card slots, throttling back the CPU speed will all help provide significant improvements to battery life.

In the end, most hardware faults turn out to be either compatibility issues or driver software problems. Making sure the hardware is well connected and used correctly will help reduce the number of problems you find.

stepbystep INSTALL HARD DRIVE DIAGNOSTICS

HDDlife Vista Gadget:

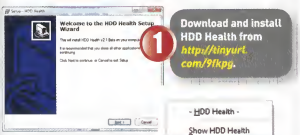


1 Download and install the HDDlife Vista Gadget from http://tinyurl.com/24vxf9.

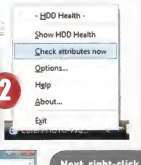
2 When the gadget appears on the sidebar after installation, right-click it, Select Options and choose the first hard drive (HDDlife Vista Gadget only supports the first hard drive in a system).

SMART or Self-Monitoring Analysis and Reporting Technology software tracks the health of your hard drive and can warn you of impending problems such as high temperatures and motor failures. But SMART software shouldn't be used as a replacement for regular backups of important data. There are two free SMART programs we recommend. One installs as a sidebar gadget in Vista, while the other is a standalone program for any version of Windows from Windows 95 on.

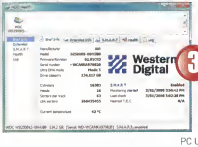
HDD Health:



1 Download and install HDD Health from http://tinyurl.com/9fkpg.



2 When the installation is complete, right-click the drive icon in the taskbar and select the 'Check Attributes Now' option.



3 Next, right-click the icon again and select 'Show HDD Health'. The window that appears gives you the current drive temperature and other diagnostics.

Connectivity solutions

What do you do when your internet or wireless connection goes down? **Rose Vines** has the answers.

Troubleshooting communications problems can be a frustrating pastime. There are so many constituents to any computer connection that it's often hard to isolate where the problem is located, let alone pin down exactly what's up. The trouble could be with your hardware: modem, router, Ethernet or wireless card, the cables, or interference from other devices. It could be with software: your communications settings or the security software on your PC or built into your router. Or the problem could be out of your hands: an outage with your Internet Service Provider (ISP) or a glitch on the remote computer or web site. Patience and a systematic approach will help you figure out most problems, and despite how messy things can get, it's surprising how often the solution is to flick a switch or two.

_TROUBLE ACCESSING A WEB SITE

A web page that won't load in your browser provides a good example of how a seemingly simple problem may have a myriad of causes. As the following steps indicate, the cause may be trivial (or could prove decidedly vexatious).

❶ Did you type the address correctly? Take a look at what you typed in the address bar and make sure it's correct.

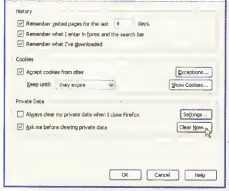
❷ Do you have the right address? Is it **wombatdreams.com**, **wombatdreams.com.au** or **wombatdreams.org**? Use a search engine to check the spelling and make sure you have the top-level domain (the last part of the address) correct.

❸ Does the web page exist? A 404 error displayed on a page usually indicates the page doesn't exist. You might have the correct name for the site but an incorrect or out-of-date page link. Try accessing the main page of the site — **wombatdreams.com** instead of **wombatdreams.com/food.html**, for example — and search for the content from there.

❹ Is the site busy? Wait 20 seconds then try to access the site once more. Often a site may be temporarily busy or its server or connection may go down for just a few seconds. Wait a short while then try again.

❺ Can you access other web sites? Try usually reliable sites such as **www.google.com.au** or **www.microsoft.com**. If you can connect to other sites, it's almost certain the problem lies with the site you're trying to access. It could be down for maintenance or experiencing some other problem. Try again later.

To double-check the problem is with the site, clear your browser's cache and cookies, restart the browser and then try to access the site. Or, if you're using Firefox, try accessing the site with IE. Some sites work only in IE (it's rarely the other way around) and sometimes, even if you can't access the site with a different browser, the different wording of an error message will help you figure out what's wrong. If you can't access other sites, then it's time to start troubleshooting your internet connection.



Some hard-to-diagnose web access problems can be solved simply by clearing your cache and cookies.

Your security software should catch changes to your hosts file and other internet settings.

_TOP TIP

Use the friends network

Before you spend hours troubleshooting, try phoning a friend who uses the same ISP to see whether they can get online. If they're also experiencing problems, it's likely your ISP is at fault, so get on the phone to technical support. Sometimes, though, an ISP will have a problem that affects only a section of its subscribers. This may be the case with email problems, when accounts are split between different mail servers and your server happens to be the one that goes down. If your friend can get online, have them check the ISP's service status page to see whether any outages have been reported.

_TROUBLE ACCESSING THE NET

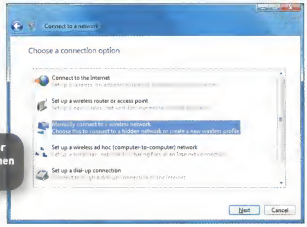
Here's where things get really interesting. If you can't access the internet at all, start by checking your hardware.

❶ Is your modem on? Check that all the usual lights are lit or blinking as appropriate. Of course, it helps if you know which lights are usually lit solid and which flash. If possible, position your modem and router so you can see the status lights.

If the lights are not lit correctly or if you're not sure whether they are, reboot your modem: disconnect the power cord, wait about a minute and reconnect the power cord and wait for the lights to come on. Then try your net connection again. If the lights are not lit up, ensure the power cord is properly seated, then check the Ethernet or USB cable between your modem and your computer. Don't just give the cables a look over; instead, disconnect each end of the

stepbystep LOCATE A HIDDEN WIRELESS NETWORK

If you can't get any wireless signal at all, it may be because your router is configured to hide its network name, also known as the SSID (Service Set Identifier). If that's the case, you won't be able to 'see' the router unless you've previously connected to it. In order to connect, you'll need to enter the settings manually.



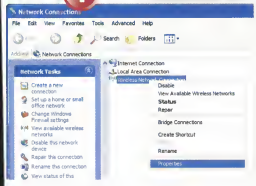
In Windows Vista:

Click the Start orb —> 'Connect to'. Click 'Set up a connection or network'. Click 'Manually connect to a wireless network' and then type in the network information, including the network name.

In Windows XP:

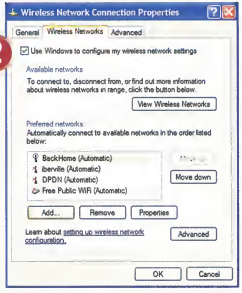
Click Start —> 'Network Connections'. Right-click 'Wireless Network Connection' and select Properties.

1



Click the 'Wireless Networks' tab in the Properties dialog box and click the Add button.

2



3

Type in the settings for your network.

cable and plug it back in securely. If you're using an Ethernet cable, it should make a click when it seats properly. If you're using a USB cable and have it connected through a hub, take the hub out of the loop: disconnect the USB cable from between the modem and the hub and connect it directly from the modem to a USB port on your computer. Also, if you're using a USB port on the front of your PC, try disconnecting that cable and plugging it into a port on the back; sometimes the ports at the front don't have sufficient power to do the job.

If the modem lights still fail to come on, give your ISP a call. There's a good chance there's something wrong on their end.

❷ Is your router on? If you use a router in conjunction with your modem, make sure the appropriate lights are lit and check its cables. Even if the correct lights are on, try resetting the router by disconnecting its power, waiting a minute and then reconnecting the power. If the router's lights fail to come on but your modem appears to be working, your router may have failed. Routers have a tendency to go bad silently and without notice. One way to check is to disconnect your PC from the router and reconnect directly through the modem. If you can successfully connect to the internet without the router intervening, there's a chance the router no longer works. It's also possible that the router's internal firewall or security settings are causing a problem; in that case, its lights should still display as usual.

Sometimes, rebooting the modem and the router separately is not enough, but a full reboot may do the trick.

❶ Switch off your computer and unplug the modem and the router.
❷ Wait a minute.
❸ Plug in the modem and wait for its lights to come on.
❹ Plug in the router and wait for its lights to come on.
❺ Switch on your computer.

_TOP TIP
Suspect leads

Sometimes it's the unlikely thing that goes wrong. A cable, even a new one, might be a dud. Swap out the telephone, Ethernet and USB cables one by one to see whether they're causing your problems. This is always worth trying before you ditch a seemingly defunct router or modem.

_TESTING SOFTWARE SETTINGS

If the old unplug-and-reboot routine doesn't

help you, check your software settings. Before you do anything else, run your spyware and virus scanners to make sure your computer is clean and that a browser hijacker hasn't taken over your browser. If you find a problem, clean it out, reboot your system and then run another scan to make sure all vestiges of the infection have been eliminated.

Malware can also rewrite your hosts file. This file is used to associate a particular internet hostname with an Internet Protocol (IP) address, the 32-bit numbered addressing system used on the internet. There are legitimate uses for the hosts file, such as redirecting known malicious sites to a safe site. The trouble is, malware can use the same file to redirect you from safe sites to unsafe ones. Good security software should warn you if your hosts file has been tampered with. In some cases, an entry in the hosts file may interfere with your ability to reach a site. To test this, rename the hosts file.

1. Locate the file. In Windows 95, 98 and Me, it's in the Windows folder, which can be accessed by clicking Start —> Run, typing **%windir%** and clicking Open. In Windows 2000, XP and Vista, it's in the system32\drivers\etc folder, which you can open by clicking Start —> Run, typing **%systemroot%\system32\drivers\etc**, and clicking OK.
2. Rename the hosts file (it has no extension) to **hostsold**.
3. Reboot your computer.
4. Try to access the web site once more.

Note that if you or a system administrator have set up legitimate entries in the hosts file, renaming the file will disable these entries. In that case, if you determine that an entry in the hosts file is causing your problem, you'll need to edit the hosts file, delete the problem entry (or entries), rename it **hosts** and reboot.

Once you're sure your system is clean, temporarily disable your firewall and then test your internet connection again. Make sure you access a site you know to be safe while your firewall is disabled. If disabling your firewall solves the problem, you'll need to configure the firewall to permit your browser to access the internet, make sure your security software is not blocking the specific computer you're using and then re-enable the firewall. The process differs from product to product, so refer to the documentation for your security software.

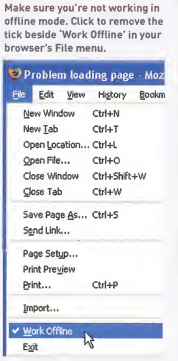
If the problem persists and you use a router, disable its internal firewall as well. You should be able to do so from the router's browser-based configuration screens. Refer to the router's documentation to find out how to do this with your particular model.

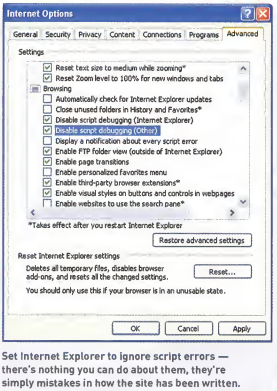
Still having trouble? If you use Vista, it has fairly sophisticated network diagnostics. Right-click the Network icon in the notifications area and select 'Diagnose and Repair'. Vista also provides access to network diagnostics directly from Internet Explorer. If you try to connect to a page and fail, you should see a 'Diagnose common problems' link on the page. Click the link to activate the diagnostics.

_TROUBLE WITH WIRELESS CONNECTIONS

Wirelessly connected computers have their own troubleshooting needs. In addition to ensuring that the router and modem are functioning correctly, try these steps if you have trouble connecting.

* Check that the wireless switch is on. Many notebooks have a switch on the side or front of the computer, which activates and deactivates the wireless network card. Make sure it's in the On position.
* Ensure the signal is strong enough. Your wireless connection software should provide an indication of the strength of the signal available. If it's low, try moving around to see if you can find a better location. Distance and intervening walls will both diminish the signal strength. If you can't get closer to the router or access point, consider buying a range booster (make sure it's compatible with your router) or, if it can accommodate one, add an external antenna to your wireless network adapter.
* Check for interference from other devices, such as cordless phones. Switch such devices off temporarily or move farther away from them. Alternatively, try setting your router and wireless network adapter to use another channel.
* Make sure you're using only one wireless configuration utility. Windows provides one and most notebooks with built-in wireless also provide their own wireless connection software. If you install a wireless card it will also probably include a connection utility. Make sure only one of these is active, otherwise you may end up with a conflict that prevents you from connecting at all. If necessary, uninstall one of the utilities.





Set Internet Explorer to ignore script errors — there's nothing you can do about them, they're simply mistakes in how the site has been written.

_TOP TIP
Be lazy with addresses

Don't feel you have to type complete web addresses. Browsers are very forgiving about how you format the address. It used to be you had to get the address exactly right; for example, **http://www.geekgirls.com**. Then browsers started letting you leave off the http://, thus: **www.geekgirls.com**. With most recent browsers, you can get away with leaving off the www. and sometimes you can even get away with leaving off the top-level domain name (.com, .org and so on). If you do type in the full address, the browser will correct your typing if you use http:\\ instead of http://.

_TOP TIP
Prepare for trouble

Most ISPs list their technical support phone number on their web site, although you may have to dig around to find it. Write it down now, *before* you have a problem with your internet connection, and stick it somewhere handy. Also make sure you have a copy of your router's documentation on hand — you should find a downloadable version at the manufacturer's site.

WINNER PC USER BEST-VALUE STANDARD BROADBAND PLAN 2007

150GB*

$69.99 MONTHLY

ADSL2+

with free IPTV channels^

$0 BROADBAND SETUP
with 18 month contract

Watch free IPTV on your PC!^

- ☑ No satellite dish or set top box needed
- ☑ No setup cost
- ☑ TPG ADSL2+ modems are IPTV pre-configured
- ☑ Not counted towards download quota

ALJAZEERA
TV5MONDE
CUBA VISION
INDONESIAN TV
PLAYBOY preview now
Bloomberg
SCTV
CHINESE TV
MALAYSIAN TV
SPORTS
DW
VOA
tve
GREEK TV
SAUDI TV
ADULT coming soon
TRT
HUNGARIAN TV
WORLD FASHION
MOVIES coming soon

Optimal ADSL2+ speeds require compatible ADSL2+ modem and filters. Around 70% of TPG ADSL2+ customers can achieve eeds greater than 10Mbps. Actual speeds will vary due to many factors including distance from the local telephone exchange, e quality of the customer's copper phone line, cabling and equipment. *Consists of 40GB peak (9am-3am) and 110GB off peak m-9am) download quota. Speed will be shaped for the period in which the download quota has been exceeded (peak and/or f peak). ^Free TPG IPTV Trial requires a minimum speed of 3.5Mbps. Number of free channels available for viewing is subject exchange capabilities. Free TPG IPTV Trial does not include subscription based channels. Total minimum cost over 18 month ntract term is $539.82 on the ADSL2+ Xlite $29.99 plan (includes $0 setup but excludes modem cost. Check www.tpg.com.au r full terms and conditions. TPG Internet Pty Ltd 65 Waterloo Rd. North Ryde NSW 2113. ABN 15 068 383 737.

egister online at www.tpg.com.au or call 1300 360 855

TPG

Build a networking toolkit

Link Harris explains how to enable networking in UBCD4Win and describes two of its standalone network troubleshooting tools.

Ultimate Boot CD for Windows (UBCD4Win) is a great tool for getting your PC up and running when you have problems. You can find out more about using UBCD4Win on page 48, but here we'll take a look at the network tools included with the program. You can access these network troubleshooting tools from UBCD4Win by clicking Start —> Programs —> 'Networking Tools'. Although many of them are exclusively for UBCD4Win plug-ins, several are available as freeware downloads that support a range of Windows versions. We'll have a look at two of these and also reveal some tricks for getting a UBCD4Win network up and running.

_IP TOOLS

This freeware package started life as IP Sniffer, so named because it's based around a packet sniffer, which is a program that monitors data flow on a network and decodes specified data packets. However, there are still remnants of the original name, namely the link for the package on the web page http://erwan.l.free.fr/ (the character in the middle is a lower-case L), the title bar in the Help —> About menu and its name on the UBCD4Win 'Networking Tools' menu.

There's no Setup program. Simply extract the archive Sniffer.zip into a folder and double-click the file Iptools.exe. If you want to run IP Tools as a service, there's an option for that on the Tools menu. Note that the program minimises to an icon in the notification area, but doesn't appear on the taskbar.

IP Tools 1.9.6.01 works for all versions of Windows, although the author doesn't specifically mention Vista, so use it there at your own risk. The scope of this tower of a networking toolkit is amazing, and it would just about fill this page to give a detailed list of all of the tools, even without describing what they do. However, you can find out all you need to know from the Help file. Clicking Help —> Help from the program itself doesn't work properly, but you can view the Help file by double-clicking Help.chm, which is located in the same folder as Iptools.exe.

_ANGRY IP SCANNER

Much simpler than IP Tools, Angry IP Scanner 2.21 from **http://sourceforge.net/projects/ipscan/** simply scans IP addresses and ports. You specify a range of IP addresses and (optionally) ports, and click the Start button. The results tell you which IP addresses are being used and which ports are open. Then, using Utils —> 'Delete from list', you can prune the resulting list to show what you're looking for. Like IP Tools, there's no Setup program, but launching the program is even simpler: you just download Ipscan221.exe and double-click it.

After you launch the program, click Utils —> 'Install / Uninstall' —> 'Install the program'. This copies the .exe file to C:\Program Files\Angry IP Scanner and puts an entry on the Start menu and a shortcut on the desktop. If you decide to uninstall the program, you should first click Utils —> 'Install / Uninstall' —> 'Remove settings from registry' to wipe your Angry IP Scanner options and settings from the registry.

The author's web site has a few plug-ins for version 2.21, which works in Windows NT/2000/XP. There's also version 3.0 beta 1, which has separate executables for Windows, Linux and Mac OS X.

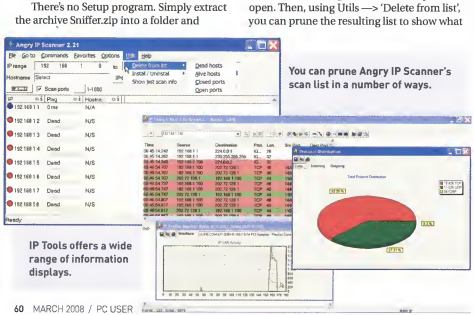
_NETWORK WITH UBCD4WIN

When you've booted with UBCD4Win and want to connect either to the internet or your local network, you need to enable network support. The part 3 video that accompanies the Windows XP tutorial on page 48 explains how to enable network support when UBCD4Win first starts. However, even if you click No at the first dialog box for network support, you can still enable it later. The step-by-step guide opposite explains how to do this, as well as how to get connected to your LAN, either to test the local network or use the network shares.

_TOP TIP

Ditch XP's network tools

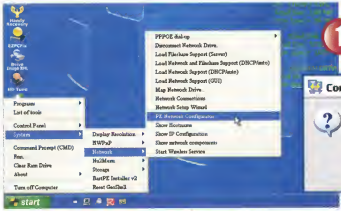
When you've booted your PC with UBCD4Win, it's best to avoid XP's network tools such as Network Setup Wizard and the 'Computer Name' tab of the My Computer Properties sheet. Although these tools appear to work properly, they all require a reboot to put any changes into effect. Since these changes are stored on the RAM disk, they will be lost if you restart the PC.



On the cover DVD

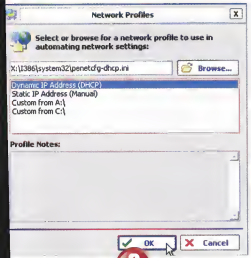
You'll find UBCD4Win and video tutorials for using the program on this month's cover disc.

stepbystep GET CONNECTED WITH UBCD4WIN



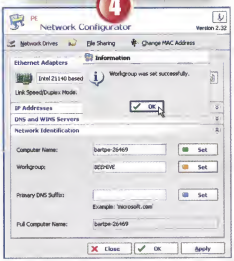
1 After booting your PC with a UBCD4Win CD, click Start —> System —> Network —> 'PE Network Configurator'.

2 Click Yes when this box appears.

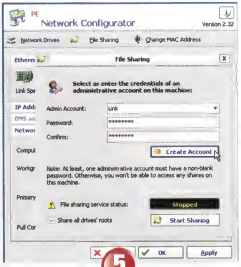


3 Unless you want to use a custom networking profile or a fixed IP address, accept the default 'Dynamic IP Address (DHCP)' and click Yes.

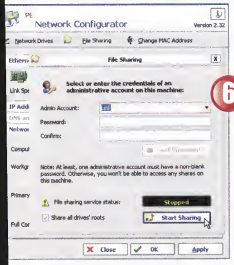
If all you want to do is connect to the internet, click OK at this dialog box. Otherwise, first expand the 'Network Identification' box, replace the default name (workgroup) in the Workgroup field with the name of the workgroup for your LAN. Note that this name isn't case-sensitive. Click the Set button and then OK to clear the information box.



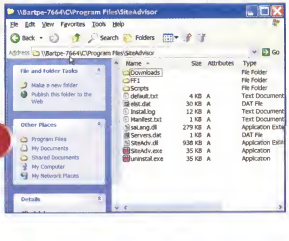
4



5 Click the 'File Sharing' button at the top and edit the username in the 'Admin Account' field to a valid username for this PC when it boots normally. Next enter the non-blank password for that account in both fields and click the 'Create Account' button (this will have changed from 'Create Password' after you edited the name in the 'Admin Account' field). Then Click OK to clear the Information box.



6 Click the 'Start Sharing' button. After 'File sharing service status' shows Started, close the 'File Sharing' window and click OK.



7 Now, 'Bartpe-7664' in this example will appear in My Network Places. You can access all of its drives and folders over the local network by clicking 'View Workgroup Computers' —> 'Bartpe-7664' —> *<drive letter>* —> *<folder name>* ('Bartpe-7664\C\Program Files\ SiteAdvisor' in this example).

Fix problems in Ubuntu

Having problems with Ubuntu? **Ashton Mills** will help you get back up and running in no time.

Installing 'restricted' extras for MP3 and DVD playback will give you less problems when playing back your files.

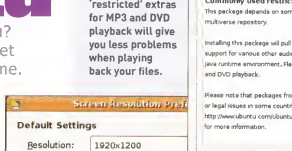
While the latest release of Ubuntu (version 7.10, aka Gutsy Gibbon) is the best yet, it's still not without its problems. Depending on your experience with Linux, you may come across some problems that are too hard for you to resolve on your own, so here's a list of some common problems and how to fix them.

_MEDIA PLAYBACK

The latest version of Totem, Ubuntu media player, has undergone some improvements and now correctly prompts to install the appropriate codecs it needs to play MP3s and DVDs. However, it still appears to be fiddly for some.

If you can't get proper playback to work, do the following: click System —> Administration —> 'Synaptic Package Manager'. Type **restricted** into the search box and 'ubuntu-restricted-extras' will appear. Right-click this and select 'Mark for installation'. Click Apply to install the packages within this meta-package.

Failing this, or to play back other media formats such as WMV, see the box 'Why you need Automatix' below.



You can change the screen resolution if your correct screen resolution is listed.

_INCORRECT MONITOR RESOLUTION

Ubuntu does a pretty good job of detecting and setting screen resolutions, but it's far from perfect. If your screen isn't operating on its native resolution, click System —> Preferences —> 'Screen Resolution' and set it to the correct value. If the value isn't available and you're sure the monitor can support it, chances are you'll need to install the official drivers for your card. See 'Enabling Compiz Fusion' below, as this is a related topic.

_ENABLING COMPIZ FUSION

Compiz Fusion is the new 3D-accelerated desktop bundled with Ubuntu 7.10, which you can enable by clicking System —> Preferences —> Appearance —> 'Visual Effects' tab.

It needs full OpenGL-enabled drivers, such as the official Nvidia and ATI drivers, in order to work its magic. By default, these aren't installed, as Ubuntu can't bundle proprietary drivers.

Ubuntu will helpfully prompt you to install the required packages, although it doesn't do it for you and doesn't tell you how to do it yourself. The reason it can't automatically do it for you is that the correct source repositories aren't enabled.

To enable all sources, click System —> Administration —> 'Software Sources'. Then, to install the official Nvidia drivers, for example, click System —> Administration —> 'Restricted Drivers Manager' and the drivers should then install properly. After rebooting, you should be able to enable Compiz Fusion from 'Visual Effects' tab.

_COMPIZ CONTROL

If you're familiar with other Linux distributions that use Compiz Fusion, you may find that Ubuntu doesn't include the CompizConfig Settings Manager (also known as 'ccsm') and instead opts for a range of

Why you need Automatix

We've mentioned Automatix before as an excellent utility to install common applications and codecs frequently left out of Ubuntu. Automatix has been so successful that the team behind it is now working with Ubuntu developers to transfers some of its features across. However, this doesn't negate the need for Automatix just yet, especially when it comes to getting media playback working correctly.

To install Automatix head to **www.getautomatix.com**, click on Installation at the top and then click on the wiki page that appears. Download Automatix for Ubuntu 7.10 Gutsy, either AMD64 or i386, depending on the version of Ubuntu you installed.

Once downloaded and installed, go to Applications —> 'System Tools' —> Automatix to start the program. Browse the list of applications

Automatix enables extra features and functionality for Ubuntu.

and features and select 'restricted extras' and 'DVD codecs' to ensure you enable full media playback capabilities.

preset values you can access from the 'Visual Effects' dialog.

To install ccsm and get full control for Compiz Fusion, including all the other effects and nifty features, click System —> Administration —> 'Synaptic Package Manager', then type in **compizconfig** for the search. Right-click on 'compizconfig-settings-manager', select 'Mark for installation' and click Apply to install it. To launch it, open a terminal (Applications —> Accessories —> Terminal) and type in **ccsm**.

_FIXING SLOW APPLICATION STARTS

If starting some applications seems to take an excessively long time, it may be related to certain network-aware applications being unable to find an IPv6 network, for which Ubuntu enables IPv6 networking by default. If you don't need this (and if your applications are starting slowly, the chances are you don't), you can easily disable IPv6 support. First, open a Terminal (Applications —> Accessories —> Terminal) and then type the following: **sudo gedit /etc/modprobe.d/blacklist**. Enter your password and then add the following line to the end of the file: **blacklist ipv6**. Save and reboot, and IPv6 will be disabled.

_INSTALLING FOREIGN APPS

Although the Ubuntu repositories are quite extensive, they might not always have what you're looking for. If you download a program that's in .deb format, how do you install it? Fortunately, it's very easy: browse to where you saved the .deb file and simply click on it to start the GNOME .deb package viewer and installer. Alternatively, you can open a command line and install a package with: **dpkg -i <program.deb>**.

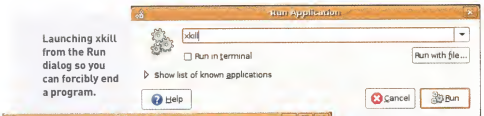
_XKILL & X

Although rare, Ubuntu can still pause or freeze sometimes with badly behaved software. To forcibly kill an application that won't end when you click the Close button, hit Alt-F2 and, in the Run dialog that appears, type in **xkill** and hit Run. The cursor will change to a cross, then simply select the window of the program you want to end.

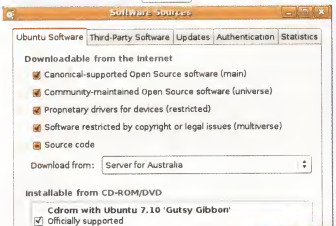
For those times when even the Ubuntu GUI is frozen, you still have an avenue of release: press Ctrl-Alt-Backspace and this will forcibly kill X, the back-end engine that powers your Linux GUI. X will automatically restart and you should be greeted by the Ubuntu login screen.

_MAKING SPACE

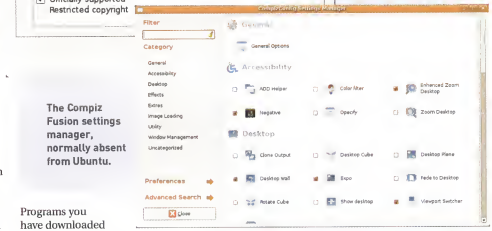
If your disk space is getting suspiciously low, don't forget to clear your browser cache and empty the trash by right-clicking on the garbage bin on the bottom-right corner of the desktop and selecting to empty it.



Launching xkill from the Run dialog so you can forcibly end a program.



Enabling full software repositories is a necessary step towards getting Compiz Fusion up and running.



The Compiz Fusion settings manager, normally absent from Ubuntu.

Programs you have downloaded or upgraded through the Update Manager and Synaptic are also cached, so you can try emptying those for extra space. You can empty Update Manager and Synaptic by launching a terminal (Applications —> Accessories —> Terminal) and running **sudo apt-get clean**.

_FORGOTTEN PASSWORDS

Ubuntu defaults to using your primary user password as the root password. This is handy for running privileged applications, but since root is the only one who can set up a password, forgetting your password and thus denying yourself root access can lock you out of your machine. So what do you do?

When you reboot and the GRUB boot menu appears, select the '(recovery mode)' version of your Ubuntu boot. Once it's finished booting you'll be presented with a root login automatically. Type **passwd** to reset the root password to a new one. If you wish to also set a new password for your main user account, type **passwd <your username>**.

_TOP TIP

Boost your startup times

Ubuntu has a handy feature to analyse and optimise your particular boot sequence, thereby reducing bootup time. To do this, reboot your machine. The GRUB boot menu will appear and you will be presented with a choice of operating systems — usually Ubuntu main, Ubuntu safe mode and a Windows boot if you have Windows installed. Select your Ubuntu boot and press E for edit. You will be shown the options the GRUB boot manager uses to load Ubuntu. On the 'kernel' line scroll right until you get to the end, then add the word **profile**. Now simply press B to boot Ubuntu with this change.

Ubuntu will take longer to load while it analyses your bootup, but once complete you will find subsequent boots to be faster. Adding **profile** this way won't stick, so you don't need to worry about removing it. In fact, you may want to add it again to re-optimise your bootup at a later date if your hardware or software configuration changes.

FOXCONN®

www.foxconnchannel.com

DigitaLife

Game WWW @

Introducing the new performance platform

- Supports Intel®45nm processors
- Dual Digital Audio
- Dual DDR3/DDR2 combo memory
- PCIe Gen2.0

DigitaLife

Digital Life motherboards combine high-performance computing, wider options for accessing and managing other devices, and technologies which enable easy access to a world of digital entertainment via your PC.

X38A

- Supports Intel® Core™ 2 Quad and Core™ 2 Duo processors
- Intel® X38 chipset
- Dual **DDR3 1333MHz** (4GB) or DDR2 1066MHz (8GB) combo memory
- 3* PCIe x16 with **ATI® CrossFire™** support
- **Dual Digital Audio** multi-streaming
- **100% SOLID Capacitor** and **Ferrite Choke** design
- **Cool Pipe** cooling system

8800GT-512 OC660/1940

- **Model** NVIDIA® GeForce® 8800GT
- **Core Clock** 660MHz
- **Memory Capacity** 512MB, 256-bit GDDR3
- **Memory Clock** 1940MHz

For more information, pls contact our distributor:

bluechip infotech

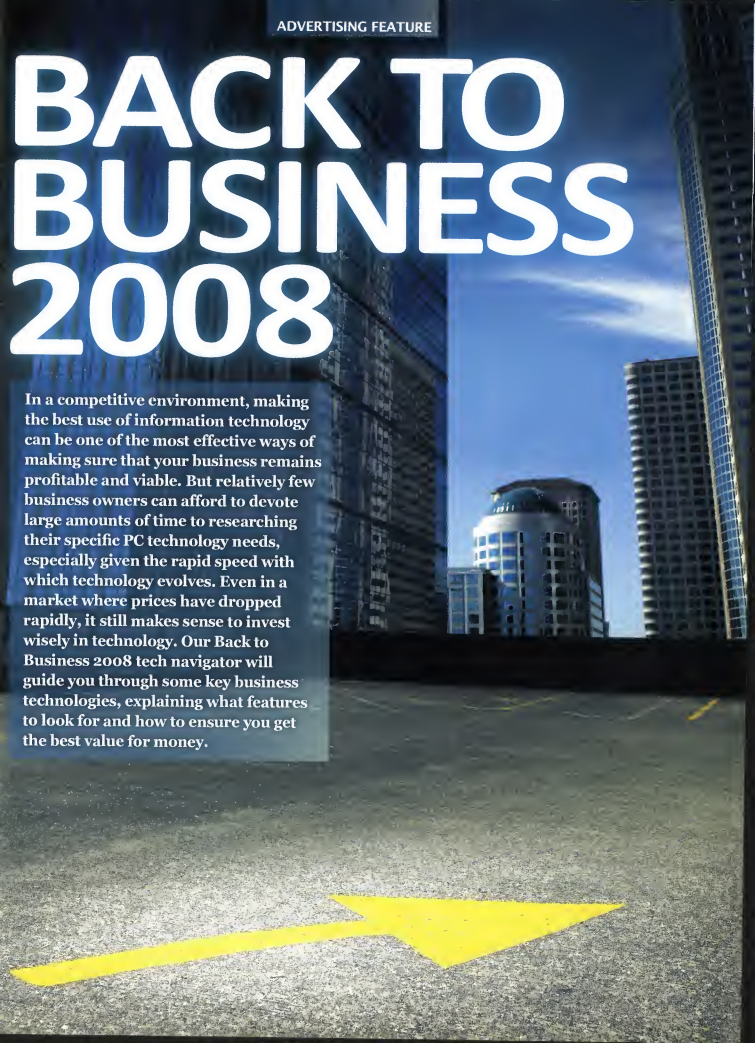
New Wave of Distribution

Bluechip Infotech www.bluechipit.com.au

97 Derby Street, Silverwater, NSW2128 Tel: +61-2-8745-8400 Fax: +61-2-8745-84

© 2007 Foxconn Electronics Inc. All rights re

BACK TO BUSINESS 2008



In a competitive environment, making the best use of information technology can be one of the most effective ways of making sure that your business remains profitable and viable. But relatively few business owners can afford to devote large amounts of time to researching their specific PC technology needs, especially given the rapid speed with which technology evolves. Even in a market where prices have dropped rapidly, it still makes sense to invest wisely in technology. Our Back to Business 2008 tech navigator will guide you through some key business technologies, explaining what features to look for and how to ensure you get the best value for money.

BACK TO BUSINESS 2008

PRINTING

Despite the extensive use of paperless formats such as email and paperless storage mediums such as CDs, DVDs and USB keys, printed documents remain critical to most businesses. And while there's a clear environmental incentive to try and reduce the volume of printed documents in our daily lives, it would be unrealistic to assume that printers are going to disappear from the modern office any time soon.

One reason for their continued presence is that printers themselves have become more flexible and versatile. Many businesses now make use of multifunction devices (MFDs), which combine printing, scanning, photocopying and faxing in a single device. This helps save space in crowded offices and reduces the need to keep separate office supplies for photocopiers, printers and faxes. The ease with which most MFDs can be connected into a network also makes it simpler to share a single device among a group of employees, further reducing cost and complexity.

The majority of MFD systems now on the market utilise inkjet technology, which relies on specially-designed ink cartridges to 'spray' the printed image onto paper. While inkjets were once viewed as poor relations in image quality terms, their output is now often near-indistinguishable from that of more expensive laser printers in many contexts. Inkjets are also highly flexible and can easily handle printing onto specialised media such as plastic labels, photo paper or even CDs and DVDs.

The vast majority of inkjet printers offer both colour and black-and-white output. While the majority of business documents are in black-and-white, having colour available when required is a useful bonus.

Many printers reflect this divergence by utilising separate black-and-white and colour cartridges, ensuring higher quality for black-and-white documents and reflecting the different usage rates for the two output modes.

For businesses producing very high volumes, laser printers remain the preferred option since they can produce large volumes of output much more quickly, especially if multiple copies of the same document are required. Lasers utilise a technology that bonds small dots of ink to the page. As such, they produce very high-quality output at relatively low cost.

Toner cartridges for laser printers typically cost more than inkjet replacements, but will produce more pages for that investment. More advanced printers can include security features such as locked output bins or the ability to only release documents when a password is keyed into the device — useful in businesses that produce highly confidential documents.

In specialised fields such as producing receipts and invoices, dot matrix printers (which rely on impact to produce the printed image) are still used. However, inkjet and laser technologies are beginning to take over even in these fields.

Whatever printing technology you favour, it's important to recognise that the initial cost of purchasing the printer is only a very small part of the equation. Costs for supplies such as ink or toner and paper will far outstrip the purchase cost over the life of a printer. A machine which is extremely cheap to purchase may be much more expensive to run.

If your business produces a large volume of documents, you may want to explore a model where, rather than paying for the printer, you pay a fixed cost for outputting each document. The printer supplier provides all consumables and services or replaces any damaged machines.

Printer design has placed increasing emphasis on reducing overall environmental impact in recent years. Many printer manufacturers offer recycling schemes for used toner and ink cartridges, so these can be reused and recycled, rather than simply being thrown away. Using ink refill cartridges for printers can also reduce the volume of waste placed in landfill.

The vast majority of new printers on the market utilise a USB connection, meaning they can easily be plugged into any PC supporting that standard. More complex network printers for use in larger offices will also likely include a dedicated network connection.

The Brother MFC-885CW is an easy-to-use flatbed MFC providing users with fax, colour print, scan and copy features, and is ideal for any home or office environment.

GET $200 OUT OF YOUR LASER MFC*.

Boost your productivity and your bank balance this new year with up to $200 cash back* across a range of Brother colour laser printers and Multi-Function Centres™, including the MFC-9840CDW with wireless network technologies. Go green and cash in on our horizontal, single pass engine with duplex printing for double sided paper saving results, colour, at the speed of single-sided black and white.

Available at Officeworks, Officeworks Business Direct, Harvey Norman, Harris Technology, The Good Guys, Office National, Corporate Express, Office Choice, Clive Peeters, Domayne, Joyce Mayne and other authorised Brother dealers.

*Cash back available on selected models via redemption. Terms and conditions apply Offer ends 31/03/08. Visit www.brother.com.au/cashbacks for details

At your side.

brother®

BACK TO BUSINESS 2008

BUSINESS PCs

While their design, performance and appearance has altered radically over the past two decades, personal computers remain central to a business's use of technology. While some of the underlying details are the same — most PCs still sport a hard drive, memory, processor and monitor — many of the fundamental elements of the desktop PC have altered radically in recent years, making them more useful than ever for businesses.

Chunky CRT monitors have now been almost entirely replaced by flat-panel LCD screens, which offer numerous advantages. LCDs offer a higher-quality display and don't suffer from the burn-in problems associated with some older monitors. They consume much less space and less power. Displays have generally become larger, with screen sizes of 20in or more quite common. Most modern operating systems also support the use of multiple displays, enabling users to run multiple applications across multiple screens.

PCs themselves have also radically shrunk in size. HP, for example, has just introduced an ultraslim desktop PC that takes up far less space than a traditional PC, without compromising performance. The HP Compaq dc7800 Ultra-slim desktop is 46% smaller than previous models. This trend toward smaller PCs reflects the fact that functions which used to require separate components, such as sound, graphics and networking, are now incorporated into the main motherboard of the PC. This results in better performance, cheaper system costs and better energy consumption. In fact, many PC companies are paying particular attention to their products' energy consumption. A ratings system called the Electronic Product Environmental Assessment Tool (EPEAT) was developed to help shoppers evaluate, compare and select desktop computers, notebooks and monitors based on the products' environmental attributes (with 'Gold' products being the most environmentally friendly). HP now leads the industry in the number of environmentally friendly EPEAT-Gold listed products on the market.

One of the key advantages of desktop PCs remains their easy expandability. If particular features are required, such as extra hard drive capacity, then adding this into most desktop PCs is easy. Notebooks, by comparison, are relatively difficult to expand from their initial specification because of the use of highly customised components in order to cram everything into a confined space.

Even the most basic PC is now likely to make use of a multicore processor, which in effect incorporates several processor systems that can work in tandem to produce faster results. For basic business applications, you don't need a hugely powered machine, but it makes sense to purchase the fastest machines you can afford in order to maximise the useful life of the system.

For business use, built-in networking is a critical requirement for any office with more than one machine. If you want to make use of wireless networking, having that adapter installed at purchase time also makes sense.

On the memory and hard drive fronts, you should install as much capacity as you can sensibly afford. Memory often makes a greater difference to system performance than raw processing capacity, so aim for 1GB as a minimum. Basic operating system installation can often require 10GB or more, so a drive size of 80GB is the absolute minimum. The figure will need to be much higher if you regularly work with large file formats such as video.

Optical drives have fallen dramatically in price. A DVD burner will allow you to easily make backups and install software, since virtually all DVD drives also support CDs and CD-Rs.

The widespread adoption of the Universal Serial Bus (USB) standard has greatly increased flexibility. Virtually all external peripherals now connect via USB, making it easy to swap devices in and out as required. While it's relatively straightforward to add additional USB ports to a PC, it makes sense to have as many as possible on your original machine. It's also useful to have these in a variety of locations; connections at the back of the machine are useful for permanently connected devices, while one or more at the front can be useful for intermittently connected devices such as digital cameras.

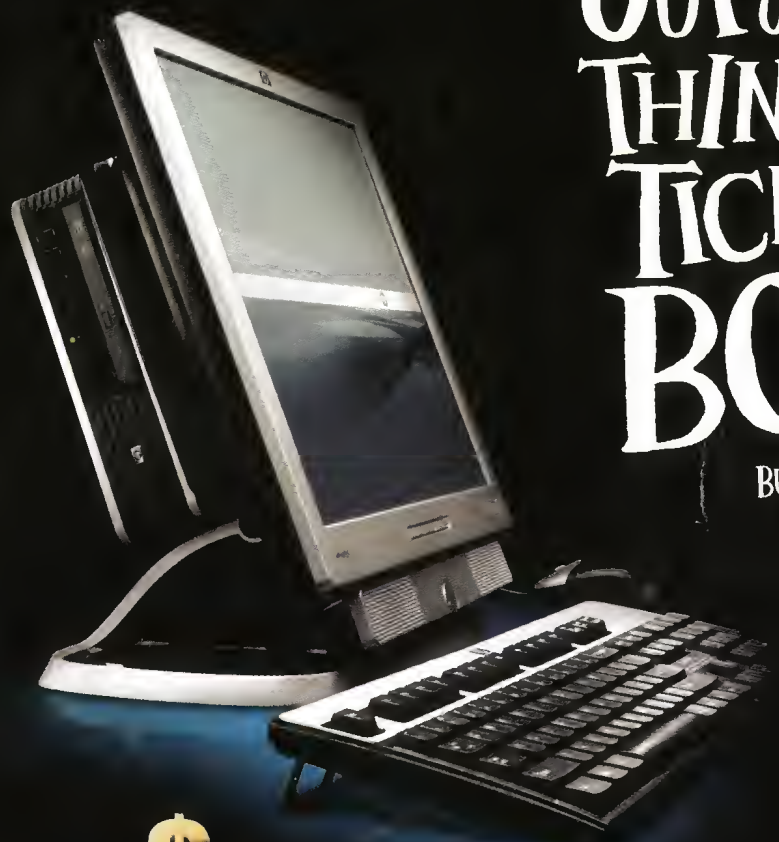
To minimise desktop clutter, consider wireless peripherals for commonly used items such as keyboards and mice. Older wireless systems often rely on specially connected infra-red adapters, which may connect to the system via USB. Newer models use the widely recognised Bluetooth standard; support for this may already be built into your PC hardware or can easily be added.

Save office space with the new compact and powerful HP Compaq dc7800 Ultra-slim desktop. It's 46% smaller than previous models.

HP recommends Windows Vista® Business

OUT OF THE BOX THINKING THAT TICKS ALL THE BOXES

BUSINESS IS PERSONAL.



Reliablity

Size

Price

Environment

HP Compoq Business Desktop PCs hove what you've been looking for stroight out of the box. Designed with reliobility, security ond monogeobility in mind, our PCs are built with industry-leading technology feotures thot will benefit your business, ond your bottom line.

Some will even save on office space like the HP Compaq dc7800 Slimline Desktop, which is packed into o 46% smaller frome* and is mountable right onto the back of your monitor**. The rugged design coupled with HP's legendory performonce means more reliobility to help reduce your downtime. It's mode with recycloble moteriols ond on Energy Stor 4 rating reduces the impoct on the environment, without compromising performance.

And for even more peace of mind, it's backed by our exclusive HP Totol Care services, with expert help ot every stoge of your computer's life. It mokes HP Compaq Business Desktops the smorter choice for your business.

HP TOTAL CARE

Call: 1300 304 894
Click: hp.com.au/ticks
Visit: your nearest reseller

hp

*Than the HP Compaq dc7700 version. **Via Integrated Work Centre Stand.

Microsoft and Windows are U.S. registered trademarks of Microsoft Corporation. Windows Vista and the Windows logo are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Certain Windows Vista product features require advanced or additional hardware. See http://www.microsoft.com/windowsvista/getready/hardwarereqs.mspx and http://www.microsoft.com/windowsvista/getready/capable.mspx for details. Windows Vista Upgrade Advisor can help you determine which features of Windows Vista will run on your computer. To download the tool, visit www.windowsvista.com/upgradeadvisor. © 2007 Hewlett-Packard Development Company, L.P. MSID:359625 HEP1106/PCU

eCOMMERCE & WEB HOSTING

Choosing a business-grade Australian hosting service with redundant internet links is the best way to make sure your critical emails are delivered on time, every time.

In the space of a decade, the internet has moved on from being something used only by the technically proficient to being an essential daily tool used by people from all walks of life. No matter what the size of your business, the internet offers a range of possibilities for improving the efficiency of your business and marketing your products and services.

The most obvious way to take advantage of the internet is by setting up a web site to help promote your business. At its most basic, a business web site should offer an outline of what your business does and include operational details such as your contact details and opening hours. Such simple sites are often referred to as 'brochureware'.

While it's fairly straightforward to create such a simple site yourself, you'll also need to go through the hassle of registering a business domain name and making sure the site design works effectively in a number of different browsers. Many business owners instead choose to make use of a specialist site design company, which can handle such largely mechanical tasks. For a basic page, this will generally be charged as a one-off fee.

Even if you have designed your own site, you'll still need to make it available on the broader internet. Virtually all businesses make use of some kind of hosting company to establish their online presence, as this is generally cheaper and allows you to concentrate on day-to-day business issues rather than worrying about whether your online server has been updated with the latest patches.

Prices and service levels vary widely, so it pays to shop around and seek recommendations and references from potential hosting companies. Pricing for hosting is typically on a per-month or per-year basis, and includes a fixed amount of online storage space and a set amount of online traffic (though few businesses in practice will end up paying excess fees).

Hosting should also include email services; after all, if you have your own business domain name, it doesn't make sense for your business email address to include the name of your internet service provider instead. Larger email services are generally charged on a per-user basis, though a typical starter account will include a batch of 10 or so user names.

While a basic business web site can be a useful first step, in order to stand out from the crowd you'll need to add extra facilities and services to your site. The most obvious extension is to begin selling goods and services directly from your web site.

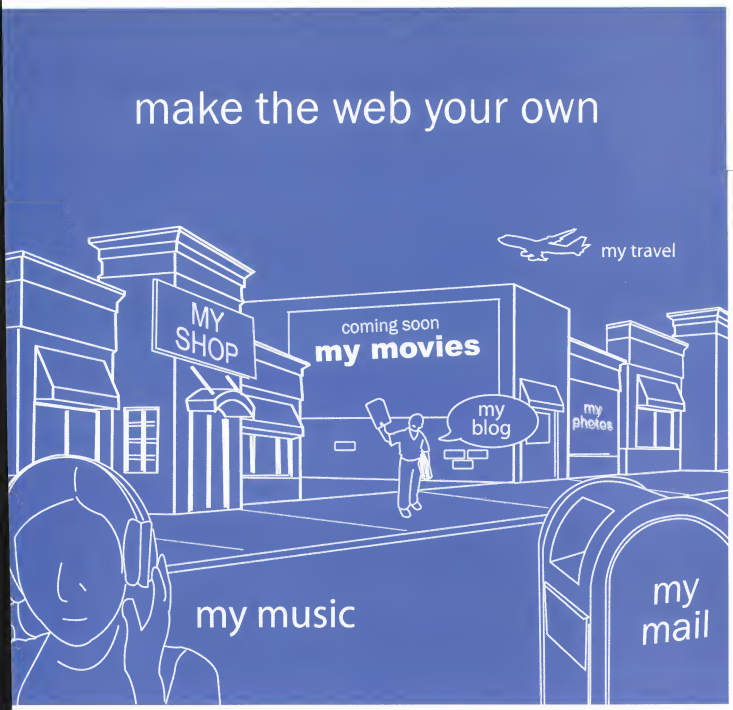
There are numerous software packages available to make it easy to set up online sales, and many hosting companies offer built-in shopping cart options to set up an online selling presence. In practice, the most complicated element to organise is not normally the actual site; rather, it is the adjustments you need to make to your existing business processes.

Another popular promotional tactic is to send out regular email newsletters, which can announce changes and developments in your business and promote one-off events such as sales and discount bundles.

It may be tempting to try and run an email newsletter within your own email system: however, in practice, it's nearly always better to use a specialised services. Many ISPs have limits on the amount of recipients that can be attached to a single email, and exceeding those limits could see your business unfairly tagged as a source of spam. You should ensure that your business adopts an opt-in model, where customers directly sign-up to your newsletter to ensure compliance with relevant communications law.

As well as being a useful promotional tool, the internet can also be a handy way to gain access to business software that wouldn't be affordable if you had to implement it in-house. Instead, companies can pay a monthly fee per user for access to enterprise-grade software via a web browser. As well as reducing implementation costs, this makes it easy for employees outside the office to access such applications in an internet cafe.

This model is often now referred to as software-as-a-service or SAAS. Earlier incarnations were often known as ASP (application service provider) or hosted applications.



dedicated support 100% free

sting domains e commerce reseller dedicated servers web design

ether you're a large business or first time home user MD can provide you with a full range of web services as well as a friendly and knowledgeable support team

MD

call now **1800 600 934** or visit **www.mdwebhosting.com.au**

SECURITY

Kaspersky Open Space Security is the most comprehensive suite of products protecting business PCs, file servers, mail servers and gateways.

Security software is like an insurance policy for your PC and the data it contains. Ideally, you'll never need to make active use of it — you don't want to be caught out by an unexpected virus attack any more than you want your premises to be burgled.

Having a comprehensive security policy is more important than ever, as the creators of malicious software are now single-mindedly focused on exploiting PCs for gain, whether that be directly or indirectly.

For many years, the main concern for PC security was viruses, which replicated themselves from machine to machine and often caused damage along the way. In 2008, the palette of potential threats is much broader, and the catch-all term 'malware' is often used to describe the many ways in which PCs can be attacked and exploited.

The notion of creating a virus purely for notoriety has now largely disappeared. Indeed, while many infamous 1990s viruses actively proclaimed their presence, hackers now go out of their way to conceal their presence, making the task of security protection much more complex. While businesses may believe that they are too small to attract the attention of an individual hacker, the emergence of 'write your own malware' kits shows that a business of any size can become a potential target.

A sensible approach to security begins with the operating systems on your PCs. All modern operating systems have 'patching' systems to allow potential security holes to be plugged, and most allow these to be automatically downloaded and installed. Microsoft, for instance, releases critical patches for Windows once a month. Ensure that your machines are set to automatically download and install such updates.

Every PC within your business should also have a desktop security suite installed to prevent the accidental installation of malware, spyware or other unwanted intrusions. Most modern desktop security suites incorporate a range of functions, including virus scanning for local files and incoming email, prevention of spyware installation and firewall software to ensure that other malicious software can't attack your systems.

For additional security, you may want to examine options that work at the network layer as well as on the individual PCs. Scanning software can be installed on email gateways, for instance, or you can utilise services that review all email and remove obvious spam and malware before even delivering the messages into your network. Security appliances such as standalone firewalls can also offer peace of mind.

A Virus Messed Up Your Plans?

Version 7.0

The new version of Kaspersky Lab personal products includes

a unique combination of three technologies

which effectively protects your computer from all types of threats in the global Internet environment.

- Automated hourly database updates
- Preliminary behaviour analysis
- On-going behaviour analysis

Kaspersky Anti-Virus 7.0

provides you with traditional Anti-Virus protection based on the latest protection technologies. You can work, communicate, surf the internet and play online games on your computer safely and easily.

Kaspersky Internet Security 7.0

provides you with the same proven Anti-Virus protection as Kaspersky Anti-Virus together with additional features including parental control, a personal firewall, an anti-spam filter, privacy control and more.

PC User BEST BUY May 07

Editor's choice Feb 07

Awarded to Kaspersky Internet Security 6.0

KASPERSKY

www.kaspersky.com.au

HELP STATION

Your technical problems solved

On the cover DVD
You'll find a copy of Steganos LockNote on this month's cover disc.

INTERNET

Printing from Internet Explorer 7

When I print a web site, I don't always need it full size. Is there a way to shrink it smaller?
— Huw McKale

There are four ways to control the printed page in Internet Explorer 7. On the File menu there is a 'Page Setup', Print and 'Print Preview', and your printer may have options you can use, too. The 'Page Setup' dialog is used to set the paper orientation to landscape or portrait, to configure page margins and to add page headers and footers. The real work is done in the 'Print Preview' tool. Here you not only see a preview of what is about to print, but you can see how many pages will print and navigate through them. If the second page has only a little text on it, consider changing the percentage in the 'Change Print Size' drop-down list. Reducing it from 100% to 90% will fit quite a bit extra on the page. When you click Print, you can then print just the first page by selecting the Pages option in the 'Page Range' area. Click it, type **1** and then click Print. Even long web pages can be reduced in size to print on fewer pages. In this dialog you can also change the orientation of the page from portrait to landscape. In the Print dialog you can choose what prints. For example, you can select some text on the web page and then go to File —> Print and click the Selection option to print only the selected text. Other print options are available through your printer. Click File —> Print and then the Preferences option. Somewhere in this dialog you may be offered the option to print multiple pages on a single sheet of paper. Some printers, especially laser printers, can also print on both sides of the page. So you can easily print four pages on a single sheet.
— Helen Bradley

WINDOWS

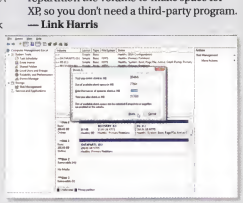
Can't uninstall Hard Disk Manager

I was trying to partition the hard disk on my notebook, which has Vista, so I could install XP to dual-boot. I installed Paragon Hard Disk Manager 8.0 Special Edition from the July 2007 cover disc. Now when I try to start Paragon I get a message that I need Administrator privileges, which I have, before Paragon will run. As the program won't operate under Vista, I have tried to uninstall it, but this hangs during the process and I am now stuck with a program that won't start and won't uninstall. What do you suggest? Now that Vista is becoming more common, it would be useful if you would state whether programs on the disc are Vista compliant.
— Stuart Cave

The setup program for Hard Disk Manager sets a restore point, so I suggest you revert to that restore point and then manually delete any remnants, such as the program folder C:\Program Files\Paragon Software\ Hard Disk Manager 8 Special Edition and its contents. To open System Restore, click Start —> 'All Programs' —> Accessories —> 'System Tools' —> 'System Restore' and follow the prompts.

Regarding software on the cover DVD, we always aim to specify which operating systems free full-version software is intended for. In the case of Paragon Hard Disk Manager 8.0 on the July 2007 disc, the documentation on the installation page of the disc states that the supported operating systems are Windows 95/98/Me/NT/2000/XP and this clearly excludes Vista.

By the way, my tutorial on page 82 of the December 2007 issue covers installing XP onto a Vista machine to dual-boot, which is what you're trying to do. As explained in that tutorial, you can use Vista's native Disk Management to repartition the volume to make space for XP, so you don't need a third-party program.
— Link Harris



Vista's Disk Management lets you create space for a new partition.

OFFICE APPLICATIONS

Stop a looped presentation

I have a PowerPoint 2003 slide presentation and I want to loop the first few slides in the presentation, but then move on to the rest of the presentation when I am ready. Can you tell me how to set this up?
— Brian Phillipson

You can do this using two custom presentations. Before you begin, however, add a blank, black slide as the last slide in your show.

To loop your first three slides, go to Slideshow —> 'Custom Shows' and create a custom show of the first three slides only —click New, type a name for the show and then add the three slides that you want to show. Click OK.

Create a second custom slideshow, this time for the remainder of the show. Use Slideshow —> 'Custom Show', click New and call this something like 'Rest of show' and add the rest of the slides you want to show after the three-slide loop is done.

Back in PowerPoint click Slideshow —> 'Set Up Show' and enable the 'Loop continuously until Esc' option, so that the first three slides will loop. Click OK when you're done.

Click on one of the slides in the custom show that includes just the three slides. This will be the one you will use to move forward to the rest of the slides. Go to Slideshow —> 'Action Buttons' and click the first button called 'Action Button: Custom'. Click and drag an action button on this slide and, from the 'Action Settings' dialog, click the 'Mouse Click' tab —> 'Hyperlink To:' —> 'Custom Show' and select the second custom show you created. Click OK twice.

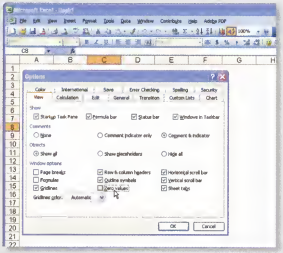
Now to run your show, go to Slideshow —> 'Custom Show', select the three-slide slideshow and click Show. This slideshow will now loop continuously until you're ready to proceed further. When you are ready to proceed, click the action button that you created and this will take you forward to the next slide in the show. Because this show is also set to loop continuously, watch for the black slide, which indicates you're done, and press Esc here to finish the show.
— Helen Bradley

OFFICE APPLICATIONS

Hiding zeros

I have an Excel worksheet that has a lot of zero values in it. While the worksheet works just fine, sometimes just looking at all the zeros is off-putting. Is there a way to get rid of them without having to remove all the cells containing zeros and perhaps throwing off some of the other calculations?
— Trent Evans

It's good that you've asked this question and not gone ahead and removed the cells containing zero. You're right, you'll probably throw your calculations off and there is a much simpler way of achieving the same result. In Microsoft Excel, click Tools —> Options —> View tab, disable the 'Zero Values' checkbox and click OK. Any zero value on the worksheet will be hidden, but it is still in the cell, so all the calculations will be unaffected. This setting applies only to the current worksheet, so if you need to apply it to a number of worksheets, do it for each individual worksheet.
— Helen Bradley



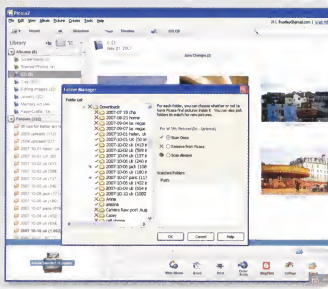
Hide zeros in an Excel worksheet using this configuration option.

PHOTO EDITING

Accessing shared folders

I am using Picasa as my photo management program, but I have photos stored on a second computer which is on my network. Is it possible to access these photos in Picasa or do I need to install Picasa on the other computer and work with them there?
— Emily Stewart

You won't need to install another version of Picasa, and you can have Picasa work with images in any network folder, provided it has been designated as a shared folder. To do this, inside Picasa, click File —> 'Add Folder to Picasa' and when the 'Folder Manager' dialog appears, click the option to use for the folders and then locate the folders on your network. For folders whose contents won't change, you can select 'Scan Once'; for folders whose contents will change regularly (for example, a folder you use to download photos into), use the 'Scan Always' option. Click OK and Picasa will include these folders as it updates.
— Helen Bradley



Use the folders option to add folders to your Picasa image list.

HARDWARE

Mounting my hard drives

Your Virtual PC program is great, but I found that I could not mount my hard drives in the guest operating system (Mandrake 10.1). Is this correct or am I doing something wrong?
— Joseph Krupa

You're correct — you can't mount physical hard drives inside a guest operating system. While I agree it is a worthwhile thing to do, we felt that, for our initial story, it would create extra problems. First, it enables the spreading of viruses with considerable ease. Second, it could also allow users to make unrecoverable changes to their hard drives. As this is the first time we've covered anything as complex as this, we wanted to keep things as simple and as fuss-free as possible. That said, we may incorporate this as an optional feature if we get enough reader support to do Virtual Machine Shop 2.
— Darren Yates

SECURITY

Password issues

I'm having a lot of trouble remembering all the passwords that I'm supposed to use. I have passwords for so many sites and they are all different. It's impossible to remember everything. I know I shouldn't write them on Post-It notes stuck to my monitor, but that's where they will be until you tell me where to put them.
— Louise Gallagher

I don't think there is a computer user who can't empathise with your situation. You're right though, passwords written on Post-It notes is not the way to go. My preference is to use a small free tool called LockNote from Steganos, which you can download from www.steganos.com/us/products/home-office/locknote/overview/ or this month's cover DVD. This handy program is a single executable file that doesn't need installing. All you do is place it somewhere on your computer so you can find it. When you double-click to run the program, you see a small notepad-type interface, which is where you put all your passwords. You password-protect this file, close it and all your data is encrypted automatically. All you need is the one password to open the file and all your other passwords and login information will be available.

The password information you type into LockNote is actually stored inside the executable file, so the whole solution comprises one very small .exe file. You can copy this to a USB drive and take it with you or put it on the web so you have it accessible wherever you happen to be. Add a shortcut to it from your Quick Launch bar, too.

There is one gotcha with LockNote, and that is to close the program: go to File —> Exit or click the Close button in the top-right corner of the window. Don't click File —> 'Save As', as this saves all your data as a readable file on your computer.
— Helen Bradley

WINDOWS

Problems with virtualisation

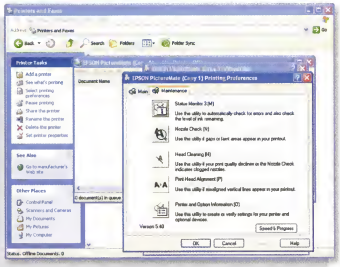
I received the latest issue last evening and as usual was keen to read it. I was excited to see your article on 'two PCs in one', as I've played around with virtual machines for the last month or so. After reading and watching your tutorial on the subject, I decided to install it. However, I have a problem when downloading the file to desktop — it opens with a .bz2 file and not the install setup routine. How do I fix this? I have Windows XP Pro installed.
— Trevor Richards

We had a couple of readers having problems with this, but thankfully, the solution is nice and easy. If you're running a Windows XP system as your host or existing OS, you need to install the Windows versions of VMware Player and Virtual Machine Shop. If your PC is running Linux and you want to install Windows as a virtual machine, you need to install the Linux versions of both tools. The tools are designed for the host operating system, not the guest.
— Darren Yates

PHOTO EDITING

Photo printing

I have a new photo printer, and I have bought some photo paper to use with it. However, the photos don't look as good as they should. Do you have any suggestions or should I buy different paper?
— Bree Henderson



If you don't use your printer regularly, you may need to clean it before you use it.

There are a few things to be aware about with photo printers. One of them is that they like to be used frequently, so it's best to use your printer a few times a week.

The second thing is that you must set up the printer for the paper type you are using. When you select Print, click Preferences to open the Preferences dialog. This is different for each printer model, although you should find an option for selecting the paper type. Regular copy paper is extremely absorbent, so more ink is required to print on it. Glossy photo paper, on the other hand, is not absorbent and so will require less ink. Selecting the correct paper type ensures that the photo will print with the correct amount of ink.

Sometimes you get a combination of paper and printer that just don't work together. In this case, buy another brand or type of paper until you find something that works and then stick to it. In future, when you buy more ink, take care to buy ink cartridges recommended by the manufacturer. Different printers use different types of ink and it's important to use the correct one — if not, the printer may not function well at all and you can damage the inkjets.

If you get streaky or inconsistent colour, clean the printer heads, which you can do by clicking Start —> 'Control Panel' —> Printers and selecting your printer. Use the options that it provides for cleaning and aligning the heads. You will need to do this, particularly if you've not used your printer for some time.
— Helen Bradley

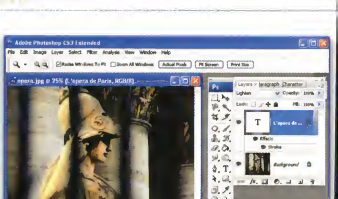
PHOTO EDITING

Stroked text

I have just moved from Paint Shop Pro to Photoshop. One of the features that I miss and cannot get to work properly in Photoshop is the ability to create text that is just an outline form. In Paint Shop Pro I set the fill pattern to nothing and the stroke to a colour, and the text was outlined. In Photoshop I only get a choice of a fill colour and I'm having difficulty getting a stroked outline. When I have text selected, the Edit —> Stroke option on the menu is disabled.
— David Mitchell

There is a significant difference between the Type tool in Photoshop and the one in PaintShop Pro. You can get acceptable results in Photoshop without having to jump through hoops using a Layer style.

Begin by creating your text the normal way: click the text tool, select the font, choose a text colour (it can be anything for now) and type your text. When you're done, select your text layer and, from the foot of the Layers palette (go to Window —> Layers if it isn't showing), click the 'Add a Layer Style' button and choose the Stroke option. From the 'Stroke fill type', select colour and then the colour to use for the outline of your letters. Choose the size and select the position as Outside, Inside or Center. A good option is to set the size to 3 or 4 pixels and set it to Inside. Click OK.



Create outline text in Photoshop using a layer style.

Now, reselect your text by selecting the type layer, click the Type tool and drag over the text. Change the type colour to match the background colour or the colour you want on the inside of your text.

If you want the fill to be transparent, set it to black and then change the blend mode for the layer to Lighten. This causes the black text to disappear, as none of the pixels in the text layer will be lighter than the image itself, because they are black. The blend mode doesn't affect the stroke. If you need to adjust the stroke width, double-click the stroke layer and change its size in pixels.
— Helen Bradley

INTERNET

Merge address

When I merge a document in Microsoft Word using an Outlook contact list, the address details look awful. Can you tell me what I'm doing wrong? I would have thought that selecting the address block was the way to go. Please help.
— Jane Selwyn

Sometimes the address block works well, although in other cases, you may do better to build the merge codes yourself.

In step 4 of the Mail Merge tool, click the 'More Items' button instead of the address block. You'll see a list of merge fields that you can use. Select each field that you want to appear in the address block in turn; for example, first name, last name, street, city, post code and so on.

If you have two fields side by side on one line, include a space between them so that the data will be spaced correctly when merged. Assemble your address block with the name on one line, followed by separate lines for the address, town, state and postcode. Click the 'Preview Your Letters' option to preview the result and ensure that everything looks right before proceeding.
— Helen Bradley

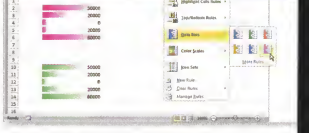
OFFICE APPLICATIONS

Data bars

I am using Excel 2007 and am having some problems with the conditional formatting option. I have a range of cells for which I am using the in-cell charting feature to highlight the size of the values in the cell. It doesn't seem to work — the lines aren't the same length for the cells in the range with the same values. So, for example, in two cells that have the same value, the coloured bars aren't the same length. What's going on?
— Jenneth Holmes

I suspect that the problem is part of the way the cell charting tool works. If you select one group of cells and apply the data bars conditional formatting feature to that group of cells and then apply the same format to another group of cells, each group of cells is dealt with separately. So, a value of 20,000 in one cell could be plotted differently than the same value in another cell. You can avoid this by selecting all the cells in the range before applying conditional formatting to the cells.

Be aware that the in-cell charting feature gives only a rough guide to value and is not an accurate representation. If you have a range that includes very large numbers and a zero value, and you apply the 'Conditional Formatting' —> 'Data Bars' to that range, you'll find that zero registers as a coloured bar where it technically shouldn't. The data bar tool was designed as a rough indicator of relative value, but shouldn't be relied on.
— Helen Bradley



Data bars in the top data collection are incorrect because the conditional formatting has been applied twice rather than to all cells at once, as in the bottom example.

WINDOWS

A question of memory

If I have a Windows XP PC with 1GB of RAM and I dedicate 512MB to Ubuntu as a virtual machine, does Windows XP then have access to the full 1GB when I close Ubuntu or just the 512MB?
— Kelvyn Lee

Windows XP gets access to the full 1GB. There are two ways to shut down a Virtual Machine in VMware Player: the 'close down neatly' option and the 'turn it off now' option. The former unloads everything from memory, shuts down the Virtual Machine and returns the memory and control back to the host operating system. The latter dumps the contents of memory to the hard drive as a special backup file and then returns the memory and control back to the host OS. This second method consumes an extra 512MB of your hard drive space, you can instantly start your Ubuntu virtual machine where you left off — there's no need to go through the boot process.
— Darren Yates

PORTABLE MEDIA PLAYERS

iPod only?

Can you play podcasts and vodcasts on anything other than an iPod?
— Fraser Goldsworthy

Given the hype the iPod has created, you could easily be forgiven for thinking that you can't, but you can play any podcast or vodcast on any device that supports the pod/vodcast audio/video compression tools or codecs. For example, if the podcast is an MP3 audio file, you can play it on any device that supports MP3 audio — MP3 player, PC, even your DVD player. It just has to support the codecs.

That said, if your device doesn't support the codecs used in the pod/vodcasts files, you can always convert those files into supported formats. Our RockPod 08 app from the December 2007 issue is designed to convert pod/vodcasts and other audio/video files into formats supported by PDAs, PCs and even the PlayStation Portable.
— Darren Yates

DISPLAYS

What is laser TV?

I have seen articles about a new screen technology called 'laser TV'. I read that the technology would be out by the end of 2007, but I have asked around at Dick Smith and JB Hi-Fi, but no-one seems to know anything about Laser TV. I presume that the technology isn't out yet. Do you think I should wait for its release or just buy a plasma TV?
— Aaron Maddock

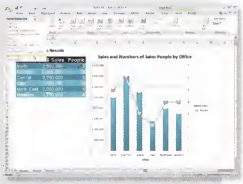
From what we understand, the laser TV's developer, Arasor, has the technology ready, although it is waiting on its manufacturing partners to get cracking on making the sets. We don't know the exact reason for the delay, but you may see some announcements by the time you read this. Still, even when it does arrive, laser TV isn't likely to be as cheap as current plasma TV technology. Just make sure that if you do buy a plasma, it is true HD in resolution (ie. it supports 1080p video display).
— Darren Yates

OFFICE APPLICATIONS

Selecting a chart object

When creating a chart in Excel 2007, it's often difficult to find and select pieces of the chart to format them. In Excel 2003 the selected item's name appeared under the toolbars. It seems this feature is missing in Excel 2007.
— Al Stevens

The feature is missing from Excel 2007, but there is a tool that works just as well. Create your chart using the Insert —> Chart tool on the Excel 2007 ribbon. Select the chart and locate and click 'Chart Tools' —> Layout tab on the ribbon and at the top-left corner of the ribbon you'll see a 'Chart Element' drop-down list, which probably currently reads 'Chart Area'. Click the arrow to open the list and you can select any element on the chart from this list. In addition to formatting the selected item using the 'Chart Tools' —> Format tab, you can also click the 'Format Selection' button just below the 'Chart Element' list to open a dialog that offers more options (many not on the ribbon). The 'Chart Element' list works two ways. It lets you select a chart element easily; if you select an element, it also tells you what you've selected.
— Helen Bradley

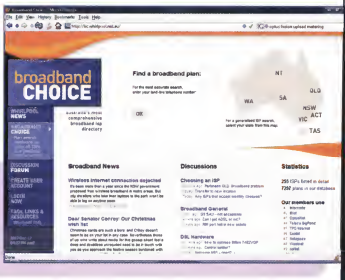


By selecting various elements in the 'Chart elements' list, you can automatically select them on your Excel chart.

Swann
Communicate wirelessly
Bluetooth™ USB Adapter
• Send & receive e-mail
• Communicate with other Bluetooth™ devices
• 100m wireless connectivity
www.swann.com.au
Windows Compatiable

Avoid P2P shaping

Nathan Taylor has some tips for picking a P2P-friendly ISP.



Sites like Whirlpool's Broadband Choice can provide a wealth of information about various ISPs, like whether they shape P2P traffic.

If you've just started using peer-to-peer (P2P) applications like BitTorrent, you may notice something. You may find you're hitting your monthly download limit very quickly, or that your downloads are taking forever and a day to complete. Some of these problems may be fixable on your PC — perhaps your router firewall is not set up properly or you need to restrict your uploads a little more — but the real problem is more likely that you don't have an ISP account that's suitable for even light P2P use. It may be time to switch accounts or ISPs. If you want one that is going to deliver a quality P2P experience, there are five things you should really look for.

* **Generous volumes.** There's no doubt about it, you can burn through some serious download volumes if you're using P2P a lot. Depending on who you ask, P2P traffic accounts for between 50 and 90% of all internet traffic today and that's partly because many of the files that are shared are so big. A feature-length video, for example, can easily account for 1GB or more of your monthly download volume. It's therefore logical to choose an ISP that gives you plenty of breathing room before you hit your limit. This takes most wireless and 3G accounts off the table, and it's mostly third-party (non-Telstra) ADSL accounts that offer these kinds of services. Given that you can set your downloads to continue when you sleep, an ISP with special off-peak quotas is often a good idea.

* **Unlocked ADSL2+.** If you're a P2P user that demands instant satisfaction, you're going to need a connection that's fast. The good news is that many ISPs are now offering ADSL2+ services that can theoretically deliver 20Mbps+ download speeds to your home (for technical reasons, the actual rate depends on how far you live away from the exchange — unlocked ADSL2+ means that whatever the fastest rate your modem can work at, that's the rate at which you connect to the internet). ADSL2+ services also offer upload speeds of up to 1Mbps, which is great if you're keen on creating and sharing your own content over P2P networks. If you're on an old 1.5Mbps download/256Kbps upload or 256Kbps down/64Kbps up, we recommend switching to one of these services. However, some ISPs (those that resell Telstra lines especially) tend to charge considerably more for ADSL2+ services. We really recommend shopping around. A number of ISPs now have their own equipment (called DSL access multiplexers, or DSLAMs) installed in certain telephone exchanges that allows them to bypass Telstra's charging model and sell ADSL2+ services at ADSL 1 prices. Optus, iiNet, iPrimus and Internode are some examples of these ISPs.

* **No upload metering.** Upload metering is bad, especially if you're a heavy P2P user. Until recently, only Telstra BigPond metered uploads, but recently AAPT and Optus started doing this on some of their accounts. Metered uploads mean that anything you upload is also counted against your monthly usage volume. P2P by its very nature involves uploading, so it becomes very difficult to manage your usage quota when you're losing unspecified amounts of it to uploads. If you upload as much as you download, for example, you're effectively losing half your monthly quota to uploads. Read the fine print on your ISP's plans before you sign up for a contract.

* **No excess charges.** Depending on your internet account, one of two things may happen when you reach your usage limit: you get 'shaped', which means your connection speed drops to roughly dialup speeds for the rest of the month; or you get excess charges, which adds a per-megabyte or per-gigabyte charge to your bill if you go over the limit. We can't stress this enough — if you're going to use P2P (and, quite frankly, even if you're not), get a flat-rate shaping plan, not an excess charge plan. Excess charges can easily slip you into the nightmare bill category, where you suddenly find your ISP is demanding thousands of dollars because you went over your quota this month. Believe us, if there's somebody in your house that uses P2P, especially if you have an account that meters uploads, it's not that difficult to exceed your quota. Even if you don't use P2P much, shaping plans are good because viruses can potentially hijack your system and use it as a mass mailer or to spread itself, eating up massive amounts of your quota without you even knowing. A fixed-rate account insulates you against such an event.

* **No P2P shaping.** This one is very hard to track down, since so few ISPs publicly admit to shaping P2P traffic, although some of them clearly do so. P2P shaping means that traffic from P2P software gets a lower priority on the network than other kinds of traffic. Our best recommendation for finding out if your ISP does limit P2P traffic on its network is to check the forums at sites like www.whirlpool.net.au. If you can't find information relating to your specific ISP, you can always turn on encryption in your P2P software, which should work around any P2P traffic-shaping schemes the ISPs have. Ironically, doing this can also work to your detriment. Some ISPs like G-node have set up P2P caching systems on their networks, which should actually speed up downloads; however, if you have encryption on, you may not be able to take advantage of it. Again, read your ISP's fine print on how they deal with P2P traffic and check online forums, which can provide a wealth of information about specific ISPs.

COOLER MASTER®

TRANSFORM YOUR COOLING EXPERIENCE

Silence, Stability, Performance...Ready for Battle

Hyper 212

CM Sphere

風神銀 GeminII S

▶ **Compatible with the latest processors**

AMD Phenom, Phenom FX
Intel Core 2 Extreme, Core 2 Quad, Core 2 Duo

.coolermaster.com.au

um Resellers

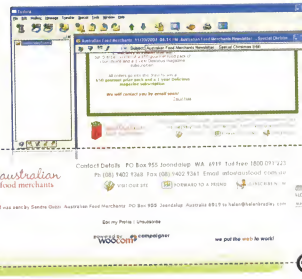
mputers & Parts Land	03 8542 8688	www.cpl.net.au
ore Com	1300 007 600	www.centrecom.com.au
Y Technology Pty. Ltd.	03 9560 2288	www.msy.com.au
orpion Technology	1300 726 770	www.scorptec.com.au

NSW	ARC Computer	02 9748 8222	www.arc.com.au
	Aus PC Market	02 9646 8088	www.auspcmarket.com.au
	Capitol Computer	02 9281 8890	www.capitolcomputer.com.au
	Umart International	02 9745 0877	www.umart.net
SA	Adrenalin Computers & Software	08 8410 0777	www.adrenalin.net.au
	DIY I.T. Supply	08 8340 8090	www.diyit.com.au
	IT4US Computers & Media	08 8231 7588	www.itforus.com.au

QLD	Computer Alliance	07 3421 3200	www.computeralliance.com.au
	Game Dude Computers	07 3387 1500	www.gamedude.com.au
	Dreamworks IT	07 3396 0544	www.dreamworks.com.au
	Umart Online	07 3369 3928	www.umart.com.au
WA	Austin Computers	08 9201 2788	www.austin.net.au/index.asp
	Trinix Computers	08 9350 1600	www.trinix.com.au
	YNOT Computer Systems	08 9330 7666	www.ycs.net.au
	Netplus Micro Computers	08 9242 7288	www.netplus.com.au

Tips for email newsletters

Keep your customers in the loop with regular emails but make sure not to breach antispam legislation, warns **Helen Bradley**.



This email newsletter has the company information and unsubscribe link as required by antispam laws.

At its heart, an email newsletter is structurally a simple web page. However, there are some special requirements to consider. It can be a great way to market your site to your visitors, but it can get you into all sorts of trouble with antispam legislation if you don't do it right. Therefore, there are a lot of things to think about when you create an email newsletter.

You have a couple of choices when it comes to creating a newsletter: you can do it yourself or subscribe to a service that automates the newsletter process. Whichever choice you make, the onus is still on you to ensure you're doing it legally and that you design it smartly.

Like any site, you should consider what you intend to achieve by sending an email newsletter. Are you simply trying to build customer loyalty or do you want your customers to do something as a result of the newsletter, such as visit your site and buy something? It's important to be clear about the purpose of your newsletter so that you can ensure it achieves its purpose in its design and content.

CODING FOR EMAIL CLIENTS

There are different things to consider when coding email newsletters and when coding sites. When you're creating an email newsletter, you're coding for a range of email applications. While there are only a handful of web browsers, in the email world there are many more email clients, some of which are web-based and some desktop-based. You'll need to create one that will work with any and all of these clients.

One feature of email clients, which is different to web browsers, is that many have image display turned off by default. These include Windows Live Mail, Gmail and Outlook versions 2007 and 2003. This article by Mark Wyner indicates the current state of image blocking in popular email clients: **http://tinyurl.com/2828ur**. It shows which have image display disabled by default and indicates how they handle Alt text, which is typically used to describe an image in situations where the image itself may not display.

One thing that will please HTML coders is that most email clients have a low tolerance for fancy code and things like Flash files and embedded movies. In fact, the HTML rendering engine in Outlook 2007 is the same one used in Word, which is a far cry from the more sophisticated rendering engine in Internet Explorer, for example. For this reason, you should code your email newsletters very carefully using plain HTML and ensure every tag is closed correctly. Avoid using fancy features like CSS style sheets and, in particular, any reference to an external .css file. If you must use CSS styles, use inline styles in the body of the document only.

Even if images don't display in your email newsletters, chances are that the rendering engine will set aside the space for the image using the height and width settings in the **IMG** tag. So, if your email newsletter opens with one gigantic image, your hapless recipient will see a big empty space where the image should be. So, never create an email newsletter with important content in an image, as many of your recipients simply won't ever see it. Instead, put this content in plain text and place it above the image so it's visible, even if the image isn't.

ANTISPAM REQUIREMENTS

Who you send email newsletters to is an important consideration. You must never buy email addresses or harvest them from the web to use, and you should only ever send email newsletters to people who have actually subscribed to your newsletter list. As such, it's important you make it easy for site visitors to subscribe to your email newsletter. When you collect email addresses, tell your clients what you intend to do with the information — typically, you'll undertake not to sell or give away the information — and you might also offer a link to your privacy statement.

Inside the newsletter, add a footer with all the information required by law. This includes your company's name and address and a link the recipient can use to opt out of receiving future emails. It's also a good idea to add a reminder to the recipient that they're receiving the message because they signed up for email newsletters on your web site. You can also include an invitation to the recipient to forward the email to a friend so they can read the newsletter. If you do this, include an 'Add Me' link, which the ultimate recipient can use to have their own name added to your email list.

When creating an email newsletter, be aware that you're writing to your customers and site visitors. Never breach the commercial relationship you have by using your newsletter to publicise anything other than things that relate to your business and never send chain email letters or joke emails to your list. It's critical to understand that although an email newsletter might look like a casual and fun thing to do, it is part of your business and its contents reflect on you and your business.

Australian antispam laws apply to email newsletters. The requirements of the law are very strict as to who you can send email messages to and what must be included in relation to opt-out requests. In addition to having an opt-out mechanism in every newsletter, you must also process these opt-out requests in a timely manner.

There's a good practical guide for businesses in PDF format from **http://tinyurl.com/yo57sc**. It explains exactly what your obligations are and how to keep your business on the right side of the law.

Watch YouTube clips with ffdshow

Darren Yates shows you a simple way to download and watch YouTube clips on your PC.

With so many different types of video codecs now available, it can be a pain trying to sort out watching new video or movie files. The first sign you'll see that something is wrong is usually when your video player says it can't find the video and/or audio codec to play the file.

Some players, including Windows Media Player, will try to head online and find the missing codec. However, every time I've had to wait for WMP to go off and find that codec, it's always come back and said it couldn't.

The simplest and smartest thing to do is to just install and use ffdshow. This is a complete codec pack, but in a sense, it's more than that because many of the codecs in ffdshow are actually faster, leaner and more efficient than the originals they replace.

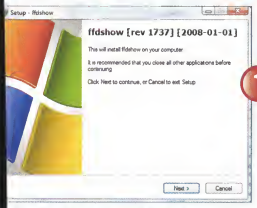
By default, ffdshow video playback includes support for H.264, DivX, XviD, MPEG-4 ISO, FLV, H.263 and a range of other codecs. Audio support includes MP3, AAC, AC-3, DTS, LPCM, Ogg Vorbis and AMR. However, the really neat trick is its support for FLV or flash video. It's the format used by YouTube and it means that instead of having to watch a clip streaming live from the YouTube web site, you can now download the file and watch it with Media Player Classic — something made possible by ffdshow.

YouTube doesn't have a download option, but there is an easy alternative: you copy the URL or web page address of the YouTube video you want to download and load it into the address entry bar on **www.keepvid.com**. Within seconds, you'll get a download link. With ffdshow already installed, you simply click on the link, download the video and open it up in Media Player Classic.

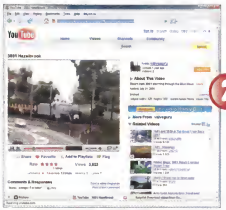
The latest version of ffdshow (r1737) now supports Windows Vista, so even Vista users can now easily download their favourite YouTube clips.

On the cover DVD
You'll find the latest versions of Media Player Classic and ffdshow on this month's cover disc.

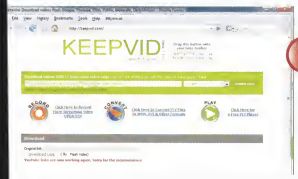
stepbystep DOWNLOAD YOUTUBE CLIPS ON YOUR PC



1 **Install ffdshow and unzip Media Player Classic from this month's cover disc.**



2 **Head online to YouTube, locate the video you wish to download and copy its web page address (URL).**



3 **Go to www.keepvid.com and copy the URL into the address bar on the page. Wait a few seconds and click on the Download link. Choose to open directly or save to your hard drive.**

4 **Use your favourite file navigator to locate the video clip you just downloaded and play it using Media Player Classic.**

Show off your favourite pics

Philip Moore creates a slideshow using Windows' free Movie Maker software.

On the cover DVD

Check out Philip Moore's video version of this tutorial on the cover disc.

Most video editing software includes the ability to create a slideshow of still images. We'll show you how to create a great-looking slideshow using Microsoft's free Movie Maker version 2.1. If you are running Windows XP or Vista, you should have a copy of Movie Maker already installed on your system. If you decide not to use Movie Maker, you can still follow this tutorial, as the principle will be the same whatever program you use.

First, open your My Pictures folder, load Movie Maker and simply drag and drop the still images you want to use into the Collections window at the top of the Movie Maker interface. A preview of the selected image will appear in the preview pane to the right. Along the bottom is the timeline. Click the button that says 'Show Storyboard', then select and drag all your images down to this Storyboard view (or use the keyboard shortcuts Ctrl-A to select all and Ctrl-D to add to the storyboard).

From here you can drag the images around to alter their order. If you need to rotate any of the images, Movie Maker does this using a video effect. In the 'Movie Tasks' pane under 'Section 2' you will find 'View Video Effects'. Click this and the centre pane will show the effects available. Use the 'Rotate 90' and 'Rotate 270' effects to get your image's orientation right.

Other useful effects you can use are 'Ease In' and 'Ease Out' to add a slow zoom effect. 'Fade In' and 'Fade Out' offer a quick fade from black or white. You may also want to try the brightness effects if the exposure in your images isn't quite right. Movie Maker doesn't offer the ability to fine-tune or customise effects, so any serious photo fixing or manipulation is best done in a dedicated graphics program.

Click the 'View Video Transitions' link in the 'Movie Tasks' pane and you will see all the transitions available in the program. These can be dragged onto the transition placeholder on the storyboard and a different transition could be applied between each image. Normally it's best to avoid using fancy transitions but if you do, choose just one type (the wipes, for example) and stick with it. The 'Fade In' and 'Fade Out' effects are also just as effective. Click the Play button (above the storyboard or under the preview window) at any time to view your slideshow with the effects and transitions in place.

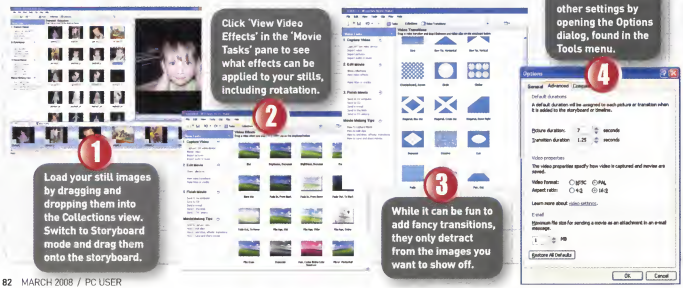
ALTERING THE DURATION

By default, each image is onscreen for 5 seconds. You can alter this default value by clicking Tools —> Options. Picture duration can be increased to as much as 30 seconds and transition duration to 5 seconds. You can also set the aspect ratio you want for this project: 4:3 or 16:9 (widescreen). Always have the video format set to PAL. If you want to alter the duration of just one photo, switch to Timeline mode, grab the image's edges and extend it — just as you would a video clip.

ADDING A SOUNDTRACK

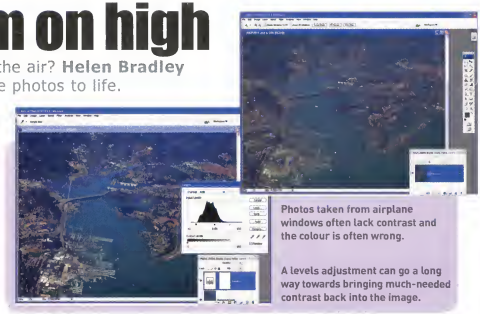
Finally, you can add a soundtrack to your slideshow. This must be done in Timeline mode. Click on 'Import audio or music' from 'Section 1' in the 'Movie Tasks' pane. You can load any WAV, MP3, WMA or other common audio file. Drag the file onto the Audio/Music track in the timeline. More than one song can be added here, with an overlap to get a crossfade between the pieces.

stepbystep CREATE A SLIDESHOW



Shots from on high

Do you take photos while in the air? **Helen Bradley** shows you how to bring these photos to life.



Photos taken from airplane windows often lack contrast and the colour is often wrong.

A levels adjustment can go a long way towards bringing much-needed contrast back into the image.

One of the wonderful things about getting a window seat in an airplane is that you get a unique opportunity to photograph things from a high vantage point. On the flipside, when you get them home you often find photos taken from the air look washed out and the colour is poor. Luckily, there's not much that Photoshop can't recover — provided the original photographs are in focus.

_FIX THE TONAL RANGE

Most airplane photos look washed out and don't have the richness of colour you might expect. To boost the tonal range and recover some colour, use a levels adjustment.

Start by making a duplicate of the background layer, so you're working on a copy in case you need to refer to it later on. It's also a good idea to always retain the original image so you can see just how far you've come when you have your final fix in place. To duplicate the background layer, right-click it in the Layers palette and select 'Duplicate Layer'.

Select the background layer and click Layer —> 'New Adjustment Layer' —> Levels —> OK. The Levels histogram will tell you a lot about the state of your image. In most cases, you'll lack white whites and black blacks, and most of the image content will be around the middle of the chart. Drag the right and left sliders below the chart so they're situated below the points where the chart data begins. This should give the image an immediate boost in contrast and some boost in colour, too. Adjust the midtone slider if desired and click OK to confirm your changes.

_COLOUR FIXES

Often the image will contain too much blue and you can fix this by using a Curves adjustment. Go to Layer —> 'New Adjustment Layer' —> Curves —> OK to display the Curves dialog. Click the Channel list and choose the Red channel. Drag up on the middle of the channel line to add some red to the image. Repeat with the Green channel, adjusting it as required (drag down on the middle to remove green and up to add it). Finish with the Blue.

If you're unsure which way to go with the adjustment, pull the line all the way to one side and see what happens, and then back off the adjustment to get something less intense. Different places on the curve line will give you different effects, so experiment on either side of the midline. Click OK when you're done.

_FIX UNEVEN CONTRAST

Photographs shot from high up generally display better tonality in the areas closer to you and poor tonality in areas farther away. To fix this problem, add yet another layer by clicking Layer —> 'New Layer' —> OK.

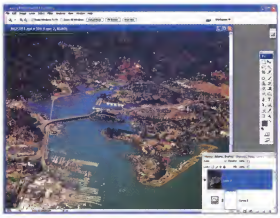
Fill this layer with a gradient by selecting the Gradient tool and then the Black to White gradient. Choose the Linear option and then drag the gradient to fill the layer. You want black at the top of the layer and white at the bottom — if you get it wrong, drag in another direction until you get it right. Don't worry that your photo has disappeared in the process! From the 'Blend modes' drop-down list, select 'Color Burn'. This should darken the image considerably, particularly in the areas where the black colour appears. Adjust the opacity in the Layers palette until you get an OK result.

_FINAL TOUCHES

To finish the colour fixing, you can boost the saturation a little using Layer —> 'New Adjustment Layer' —> 'Hue/Saturation'. If the image needs a little lightening and you have Photoshop CS3, use a Brightness/Contrast adjustment layer. If you're using CS2 or earlier, use a Curves adjustment and this time drag the composite RGB curve upwards to lighten the image. The Brightness/Contrast tool in earlier versions of Photoshop is to be avoided at all costs, as it damages good pixels in the image — the new tool in CS3 is much better.

The final step, as with any image that you have fixed, is to apply some sharpening to it. To do this, you need a single image layer. Instead of flattening the image and making all the changes permanent, create a composite layer by pressing Ctrl-Alt-Shift-E. Select this layer and use Filter —> Sharpen —> 'Unsharp Mask' to sharpen the image. Set the Radius to between 0.5 and 1 and set the Threshold to under 10. Adjust the Amount until you get a good sharpening of the image.

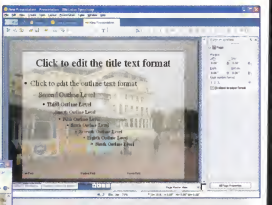
To check the finished image against the original layer, right-click the background layer visibility icon and select 'Show/Hide all other layers'. This shows the image you started with. Right-click the visibility icon again and choose 'Show/Hide all other layers' to see the result.



With some enhancement to the saturation and some colour correction, the image comes back to life.

New office freebies

The market in office software is booming — but a lot of the best apps won't cost you a cent, says **Helen Bradley**.



Lotus Symphony has all the basic office apps most people will need.

Today, more than ever before, it's easy to find office suites that do pretty much everything that most people need and are available for free online. This month we'll look at the new features in two free apps and a brand-new application from a big name in computing: IBM. Two of these apps are offline solutions, and one has a foot in both camps — it can be used online or off. The programs are OxygenOffice (a souped-up version of OpenOffice.org), the new IBM Lotus Symphony and Zoho Office.

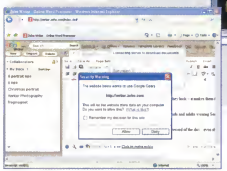
Most people will be familiar with OpenOffice.org, an open source free office suite that includes a spreadsheet, drawing package, presentation and word processing program, as well as a database. OxygenOffice is OpenOffice.org with a swag of handy additions. While OxygenOffice is its current name, it has also been known as OpenOffice.org Professional, so be aware that the two are the same and the basic engine underlying OxygenOffice is OpenOffice.org.

One benefit of OpenOffice.org, apart from the fact that it runs on such a large range of operating systems, is that it comes in different varieties to suit a range of needs. Not only is there OpenOffice.org and OxygenOffice, but there is a cut-down version of OpenOffice.org that can be run from a USB flash drive, so you can take a version of your office application with you in your top pocket. Just try doing that with Microsoft Office!

At the time of writing, the latest version of OxygenOffice Professional was version 2.3.1. When you install OxygenOffice, not only will you get the latest release of OpenOffice.org,

On the cover DVD

You'll find this month's macros, the latest versions of OxygenOffice and IBM Lotus Symphony, as well as two video tutorials from Helen Bradley on this month's cover disc. One tutorial introduces IBM Lotus Symphony, and the other one Zoho Writer.



You can work online or off with Zoho Writer and switch between the two using a menu option.

but you'll also get more than 3,000 additional graphics — both clip art and photos, which you can access from the gallery and add to your documents. There are also templates and sample documents included with the program, over 90 additional fonts and additional help. If you're an OpenOffice.org user then upgrading to OxygenOffice is a great idea.

_ONLINE OR OFF WITH ZOHO

Zoho Writer is one of the component parts of the Zoho Office Suite, which you can access by visiting **www.zoho.com**. Zoho Office has been expanding for some time now and it comprises a range of handy online office tools. These include a word processor, spreadsheet, presentation tool, an online database, projects and CRM applications. You'll need to register to use the site, but this is free.

When any application opens you can switch to another application by selecting the 'Switch to' list and then choosing the application to switch to. Zoho Writer is where the interesting work is happening in Zoho's development. Not only is Zoho Writer a handy online word processing package, but it now no longer requires that you're always connected to use it. So, for example, if you are sitting at an airport taking advantage of a wireless internet connection while waiting for a flight, you can work on a document online in Zoho. If you need to go offline to catch your plane, all you need to do is to click the 'Go Offline' button.

_INSTALLING GOOGLE GEARS

At this point, if you have not already done so, you will be prompted to download and install Google Gears. Google Gears is a tool that enables web applications to be configured so they can function even though you are no longer online. Once Google Gears is installed, restart your browser and return to Zoho Writer. Because this will take a few minutes, it's best to install Google Gears and test the application before you need to use it. The installation process is only required to be completed once.

Back in Zoho Writer, click the 'Go Offline' button and you will get a prompt indicating that a web site wants to use Google Gears. Click Allow and, if desired, select the 'Remember my decision for this site' checkbox so that this site will always be allowed to access Google Gears. Once this is complete and you have allowed the application to save data to your disk, you will be switched into offline mode. Zoho Writer will then be operating as an offline word processor from inside your browser and does not require an internet connection to be available. However, you must complete this process before your internet connection is disconnected.

_WORKING IN OFFLINE MODE

You can then continue to type into your Zoho Writer application and format your text. Save your document to your hard disk periodically by clicking the Save button.

Some features of Zoho Writer are not available in offline mode — some because they utilise options that have to be accessed online and others because the functionality is not yet available in offline mode.

When you later connect to the internet, save your document and then click the 'Go Online' button to reconnect to Zoho Writer online. You'll see an indicator on the screen telling you that the current version and the online version are in conflict with each other. This simply means they are different because you have been working on the offline version. Click Synchronize to synchronise the two documents.

By default, when you click to 'Go Offline', 15 documents are taken offline from your 'My Documents' list and from your 'Shared Documents' folders. These are taken in the order that they appear in the lists. If you need to download more documents than this, click the down pointing arrow to the right of the 'Go Offline' button and select how many documents from 'My Documents' and how many documents from 'Shared Documents' to download.

In the future, expect to see the development team at Zoho adding more features to the offline version of Zoho Writer and extending the concept of online applications being able to be used offline to other tools in the suite.

OTHER ZOHO WRITER FEATURES

In addition to offline mode, Zoho has also added some new features to the Writer tool. One of these additions is support for headers and footers, which you can configure in the 'Page Setup' option. To do this you will need to be in online mode, click the 'Page Setup' button and you'll see two tabs: one each for the Header and the Footer. Choose the one to use and then opt to add any or all of the Left, Middle or Right, header or footer. You can also select to include a narrow border between the header or footer content and the rest of the document.

For each header and footer option, there are items in a drop-down list you can choose from; for example, page number, image, date and custom. Choose Custom to include your own text in the footer or header. Click Save to save the changes to your document.

You won't see the header and footer on the screen, but you will see them in an exported document when you click Export —> PDF, for instance. They will also appear on your printed copies of the document.

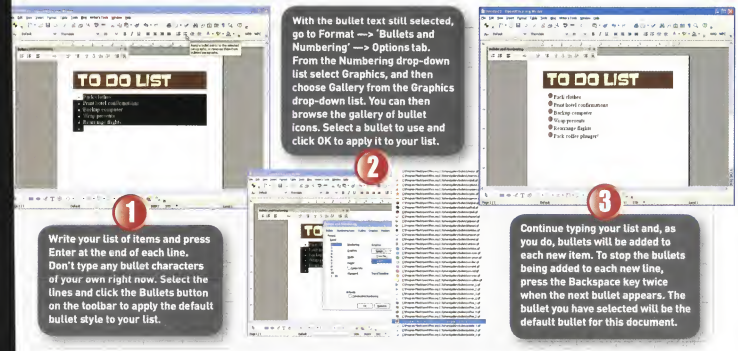
IBM'S NEW OFFICE SUITE

It wasn't too many years ago that Lotus was a major name in office productivity software. Building on the popularity of the Lotus 1-2-3 spreadsheet, Lotus SmartSuite offered everything from a word processor to a handy database program. Of late, since its purchase by IBM, the suite has fallen by the wayside, eclipsed by its close rival WordPerfect and a swag of free office suites. However, IBM is now back in the office application market with a new suite called IBM Lotus Symphony.

IBM Lotus Symphony is a beta application that includes a spreadsheet, word processor and presentation tool. All three tools are selectable from the main program window. Each is a smart-looking tool with an uncluttered interface. To get started, click the application you want to use from the Home screen to open that application with a brand-new document. If you open new documents in multiple applications you'll see that they all appear in the same interface, making them easy to find.

Each application has a menu structure across the top of the screen and toolbar buttons underneath. The Properties sidebar offers various formatting options. In the word processor you can draw a table using Table —> 'Freehand Table' and drag to draw one on the screen. Within a few seconds you're ready to type into the table. To format text, select it on the screen and choose the formatting options from the 'Text Properties' pane.

stepbystep GRAPHIC BULLETS IN OPENOFFICE.ORG WRITER



The program can do some things that other programs can't; for example, it can rotate even plain text 90°. You can also create a chart based on data you've added to the table by simply clicking in the table, clicking the Create button on the main toolbar and choosing Chart. You can select from a range of chart types and configure your chart's options using the small wizard-like interface. If you double-click on the chart you will see buttons appear on the toolbar for tasks such as changing the chart style and hiding and revealing titles.

One big plus for this program is the ability to export a document as a .pdf file — you'll find the option in the File menu.

The program also comes with a selection of graphics you can use in your documents, or you can add your own images. Go to Create —> 'Graphic from file' and select the folder containing your images. Select one and click Open to open it inside your document. Right-click the image and select 'Graphic properties' to open the dialog where you can change how the image appears on the page and its wrap options. You can also fix the image using the Graphics tab, which has tools for colour correcting an image by adding or removing blue, green and red from it. You can also adjust its brightness and contrast, its gamma and transparency.

If you've used any word processing program regularly, you'll be up and running with IBM Lotus Symphony's word processor within a few minutes.

_PRESENTATIONS

When you create a new presentation, the title slide for your presentation will appear on the screen. Click Create —> 'New Page' to add another slide and then choose a layout format for it. To control formatting on your slides, go to View —> Master —> 'Page Master View'. The settings you apply here will affect all the slides in your presentation. For example, you can add a photo behind the slide and adjust the text so it's visible over it.

One thing that might confuse you is the toolbar layout. The toolbar row has a number of toolbars on it and they don't show all the available tools, even if you click the 'More Buttons' link. The best solution is to find the toolbar you want to use, drag it down to a new row and all its buttons will appear. If you have a photo on a slide background, you can add a semi-transparent white rectangle over it using the Drawing toolbar options, so you can see the text on the slide more easily.

_DATA & NUMBER CRUNCHING

The spreadsheet application works similarly to any spreadsheet. On the toolbar is a function list from which you can select a function to use on your data. The chart tool operates in the same way as the chart does in the word processing component.

There are tools to use to sort your data on the Manipulate menu, and you can also filter your data to analyse it. You can create your own fill lists by clicking File —> Preferences and selecting the 'Spreadsheet Editor' option. Open it, click 'Sort List' and create your own sort list, which can also be used to fill cells and sort data.

The program can save in a range of different file formats, including Excel's own .xls format, so you can import Excel files. You can also open files created by programs such as OpenOffice.org, Lotus 1-2-3 files and database format files.

_MACROS OF THE MONTH

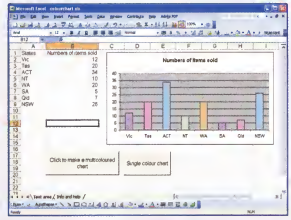
This month's Excel macro of the month will recolour the data points in an Excel column chart. The macro assumes you are working with a column chart that has only one series. The macro starts by recording the currently selected cell, so it can return you to this cell later on. It then selects and recolours each column in the chart, one at a time. It does this using colours stored in an array. The macro selects the chart and then selects and processes each column individually using a `For... Next` loop. When the data point is selected, the macro changes its interior colour to one from the array of colours. Because the array has only five elements and the chart could have many more columns, a modulus calculation is used to rotate through the five colours in the array. The loop counter is used in the modulus calculation to create a set of alternating colours — the five colours are used once each and then they repeat as needed across the chart. When all the data points have been processed, the original selected cell is reselected.

You can set your own colours by typing the values into the array data lines in the macro code. You can find the numbers of the colours available in Excel here: *www.mvps.org/dmcritchie/excel/colors.htm*. The macro is in a file called colourchart.xls on the cover disc. Copy the code from this file and paste it into your personal.xls macro workbook, so it will be available for you to use anytime.

The Word macro of the month sets the tabs required to create lines that someone would use to handwrite details into a form. It begins by clearing all existing tab stops in the document and it sets two tabs, one left tab at 2.5cm and one right tab with a dot leader at 14cm. When you run the macro the first time, it sets the tab stops. You then type your data, press the tab key twice and press Enter to get a row of dots for someone to handwrite information. Continue typing some text, pressing Tab twice and Enter for each line required. When you are done, run the macro again and it will reset all tabs by simply clearing those you have set.

The macro uses a static variable called `statusOfLines`, which is a Boolean variable that maintains its value even after the macro has been run. The macro flips the value of the `statusOfLines` variable each time it is run, so its current value can be used to identify the code to run each time the macro is run. This solution can be adapted to any situation where you want to toggle between two different behaviours. Place one set of behaviours between the `If...then.. else` statement and the second set between the `Else.. End If` statements.

The macro is in the file signinglines.doc on the cover disc, which also contains more information about its use.



This month's Excel macro turns a single-colour column chart into a multicoloured version.

DIY music player

Helen Bradley explains how to use VB to create your own music player.

This month's player supports ripped .wma files stored in your My Music folder.

You've ripped music from CDs to your My Music folder and now you want a simple application to play the files. It's a simple process to build your own player in Visual Basic (VB) and set it to look for tracks in a specified location.

There are two features of VB that make this application simple to create. One is the WindowsMediaPlayer control and the other is MyNamespace. WindowsMediaPlayer gives you all the features of the Windows Media Player accessible on a form using a single control, while MyNamespace lets us access and get the contents of the My Music directory with a single line of code.

This month's player has the same basic design as last month's — the project comprises a form, a label, two buttons, the WindowsMediaPlayer control and a ListBox. Here are the text properties you should set for each control:

Control	Set property to:
Form1	Audio Player
Label1	Select a file to play
Button1	Load and play the file
Button2	Close

To find the WindowsMediaPlayer control, right-click the Components entry in the Toolboxand select 'Choose Items' —> 'COM Components' tab and locate the WindowsMediaPlayer control. Enable its checkbox and click OK. This adds the WindowsMediaPlayer control into the Components collection. Drag and drop the player control onto your form.

ACCESSING THE MUSIC FILES

This month we'll use the `My.Computer.FileSystem.SpecialDirectories.MyMusic` property to find the music files stored in the My Music folder and in its subfolders. In last month's solution, only the current directory's contents were searched, but the solution will be more useful here if it offers us all the music tracks in all the subfolders of the My Music folder.

Additionally, last month we searched for and played .wav files, whereas this month we'll search for and play .wma files. So, this player can find and play music you have ripped using Windows Media Player.

This statement should appear in the `Form1 Declarations` section: `Public musicNames(1000) As String`. This code should be added to the `Form1_Load event`:

```
Dim arraycount As Integer = 0
My.Computer.FileSystem.CurrentDirectory =
My.Computer.FileSystem.SpecialDirectories.
MyMusic
For Each File As String In My.Computer.
FileSystem.GetFiles(My.Computer.FileSystem.
CurrentDirectory, FileIO.SearchOption.
SearchAllSubDirectories, "*.wma")
ListBox1.Items.Add(My.Computer.FileSystem.
GetFileInfo(File).Name)
musicNames(arraycount) = My.Computer.
FileSystem.GetFileInfo(File).FullName
arraycount = arraycount + 1
Next
```

The statement declares an array of 1,000 items will be used to hold the music filenames. We're assuming there are no more than 1,000 .wma files in your My Music folder; if you have more, you will encounter a program error. If you have a lot of music files, increase the array size to 10,000, for example.

This array is used to store both the filenames and the associated file paths of all the .wma files retrieved. The filenames only are displayed in the ListBox. To avoid confusion, the array has the same ordering as the ListBox, so each filename that appears in the ListBox has an associated entry in the `musicNames` array.

On the cover DVD

On this month's cover disc you'll find the video version of this tutorial and, in a file called code.txt, you'll find all the code needed for this project.

The array is required because, although we're only displaying the filename in the ListBox, both the filename and the path must be passed to the WindowsMediaPlayer control in order to play the file.

In this `Form1_Load` event, the ListBox is populated with the filenames and, at the same time, the array is filled with filenames and paths. This code should be added to the `Button1_Click` event:

```
If ListBox1.SelectedItem <> "" Then
Me.AxWindowsMediaPlayer1.URL =
musicNames(ListBox1.SelectedIndex)
Else
MsgBox("Please select a file", MsgBoxStyle.
OkOnly, "Select a file")
End If
```

When a user selects a file in the Listbox and clicks the button, the code sends the filename and path of the selected file to the WindowsMediaPlayer control. It identifies the selected track from the `ListBox1.SelectedIndex` property, which contains the location in the ListBox of the selected item. This is used to determine the array element containing the filename and path of that track, which is then sent to the WindowsMediaPlayer control. When the control receives a URL, it automatically plays the track. This is the code for the `Button2_click` event: `End`.

If you completed last month's project, you'll realise this month's code is more complex. Last month, the ListBox was populated with filenames only because we knew exactly which folder the files came from. When we needed to provide these filenames and the path of the file to the WindowsMediaPlayer control, we simply hard-coded this into the URL we sent. This month, because we are searching subfolders, we won't know which folder the selected file came from, so we need a way to find it. Storing this data in an array when the form is loaded is one possible solution and the one we're using.

Once you've created your project, save it and build it by choosing the option on the Build menu.

Tame your system

Helen Bradley uses Ashampoo PowerUp XP2 to tweak system settings for optimal security and speed.

There are lots of reasons why your computer may not run as effectively as you'd like it to. Ashampoo PowerUp XP2 is an extremely powerful program with many features that can help you get your PC running properly again.

When you run the program, you'll find menu items down the left of the screen that open different settings on your computer. These include Windows system settings, your drives and files, boot options and so on. There are also two drop-down menus called Options and Internet. From the Options menu you can choose 'PowerUp Tray Tools' to load a set of tools into the system tray and the 'PowerUp SwitchDesk' to create multiple desktops. You can also select 'PowerUp Tools' from the Options list, which gives you access to a registry cleaner and a file wiper that lets you permanently delete duplicate files.

Many of the features of Ashampoo PowerUp aren't accessible any other way, other than manually accessing them in the Windows registry. So, it's a one-stop place to access and create some special settings that you may never have been able to tweak on your own. One example of what can be done with the program is setting user permissions; for example, you may wish to prevent users from accessing certain tools in the Start menu, such as the Run command. To do this, click the Security option —> General tab and you can configure what shows in the Start menu. You can also prevent users from using the Registry Editor by disabling its checkbox. When you've made a change to a setting and closed the program, you'll be prompted to restart your computer to apply the new settings.

When you first launch the program, a backup profile is created to store your computer's current settings. You can use this to restore your computer to its original settings if you find that any of the changes you've made don't work for you.

Other handy options for maintaining your computer can be found in the Security —> 'Control Panel' area. Here you can control a user's ability to configure the appearance of the desktop, its background and/or the screensaver. The 'Boot Options' —> Startup tab shows the programs that run at startup. You can use this tool to disable programs from running automatically.

You can also configure a particular user to be logged on automatically when Windows starts, so that you don't have to go through the normal logon process. If you're using Outlook 2000 or XP, you can use the Applications —> 'MS Outlook' tab to select which attachments can be opened automatically in Outlook.

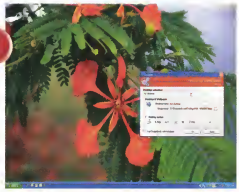
SPECIAL OFFER

You can upgrade to the even more powerful Ashampoo PowerUp 3 for less than half the regular upgrade price. From inside Ashampoo PowerUp 2, click the Internet menu, select Upgrade and then 'Ashampoo PowerUp3 Upgrade' to take advantage of this offer.

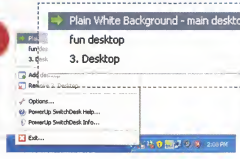
stepbystep CREATE A NEW DESKTOP

1 **Ashampoo PowerUp XP 2 lets you create multiple desktops. This way, you can have a different desktop for different applications but still pass information from one to the next. To display the desktop tool, go to Options —> 'PowerUp SwitchDesk' to enable this feature.**

2 **Left-click the 'Ashampoo PowerUp SwitchDesk' button in the system tray and select '2.Desktop' to switch to the second desktop. Click the button again, this time choosing Options. Enter a name for your desktop and select a BMP image as its background. You can also set up a hotkey for the desktop and opt to start the SwitchDesk tool whenever Windows starts.**



3 **Applications that are open in one desktop don't appear on the other desktop. However, you can copy something from a program in one desktop and paste it into a program on the other desktop. Simply switch between desktops to do so. If you remove a desktop, any open applications can be transferred to the main desktop.**



Copy discs with BlindWrite

Don't risk damaging your original discs — use a copy. **Helen Bradley** shows you how.

Most of us have encountered the situation where we've inadvertently damaged a disc. The disc may have been dropped and gotten scratched, and the result is that it no longer plays properly or at all. Not all discs can be copied easily, so if you damage a game CD or DVD, you may not be able to play the game anymore. This can be particularly bad if the game cannot be played on your computer without the disc being in the drive.

Luckily, on the cover disc this month we have a copy of VSO Software's BlindWrite, which can make copies of discs for backup purposes. It does this by making a disc image, so the copied disc will work just like the original did. BlindWrite can make copies of a range of different types of discs including CD, DVD and Blu-ray discs. However, the program can't duplicate copy-protected DVD movies, as it's illegal to do so.

Normally, when writing an audio CD, for example, the files and indexes need to be located correctly and the disc needs to be closed. However, because of the way BlindWrite works, you don't need to worry about any of that — the program simply makes a copy of the disc's image and writes that onto the new disc to make an exact duplicate.

You can use the Copy feature to make an image of a disc and write it to a new disc. Alternately, you can use the Read and Write options individually. If you select Read, you'll create a disc image in a folder on your hard drive. This folder doesn't contain the individual files from the disc, but it contains the image. This image can then be written back onto a CD or DVD at a later date using the Write tool. When you make a disc image, it will be stored as a set of special BlindWrite format files. You will find these stored in your My Documents\BlindWrite folder. You will have a .b6t and a .b6i file for each disc you read. To create a new disc from this image, you must use the BlindWrite program to burn the image to a new blank disc. To write an image to a disc, open BlindWrite, select Write and open the folder containing the disc image.

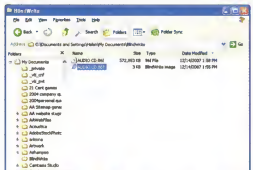
Another possible use for a BlindWrite disc image is to play a game that would otherwise need to be run from a CD, using the disc image on your computer. To do this, you'll need additional software that's compatible with BlindWrite disc images, such as DAEMON Tools (www.daemon-tools.cc).

SPECIAL OFFER

Exclusive to *PC User* readers, VSO Software is offering 20% off its entire range of burning and multimedia software. Just go to www.vso-software.fr and, when purchasing, use this coupon code: PCUSER.

stepbystep WORKING WITH BLINDWRITE

1 To read an image from a CD or DVD and write it to your hard drive, select the Read option in BlindWrite. Choose the folder to store it in and set the Profile to Automatic. Click Read and wait as the process completes.



2 The disc image can be found on your hard drive in My Documents\ BlindWrite if you chose to save it in the default folder. There will be two files there which contain the information BlindWrite needs to create an exact duplicate of this disc.

3 At any time you can write the image back to another blank disc. Place the blank disc in the drive, select the profile to use — Automatic is a good choice — and click the Write button to burn the disc. When the process is complete, a confirmation dialog will appear.

Learn to play the guitar

Helen Bradley explains how you can unleash your inner muso with Guitar Academy.

SPECIAL OFFER

For a limited time only, you can purchase the full GCH Guitar Academy course at a special discount price. This two-year guitar course will cost you just $32 – less than a lesson with a professional guitar teacher. Just visit www.guitar-academy.com/SE/ for your upgrade.

Every time I watch someone playing the guitar, I dream of being able to do so myself. However, I know such skill requires years of learning. GCH Guitar Academy is an easy-to-use multimedia guitar course. With it, you can be on your way to playing the guitar within a few weeks.

When you first launch the program, spend a little time familiarising yourself with what's available. Down the left side of the screen are links to the lessons — you have two full months of lessons available to you here. There are also some games on offer that you can use to reinforce what you're learning in the lessons. These test you on your ear and your understanding of the basic chords.

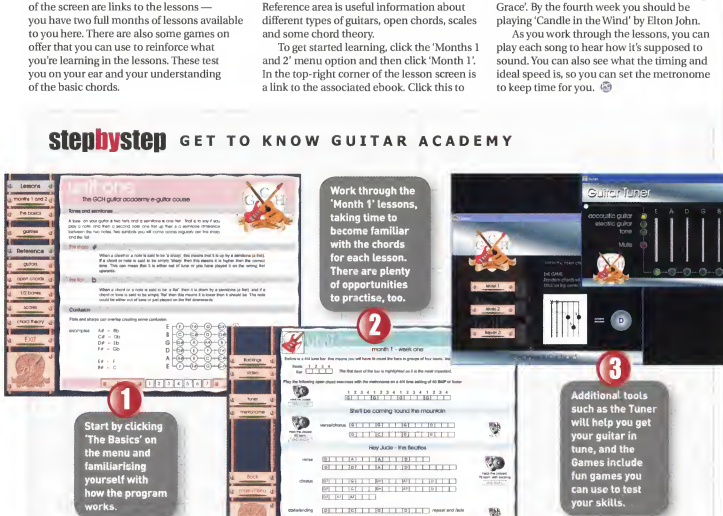
If you're new to the program, click 'The Basics' to read about how the program works. You'll also see what the program buttons look like and what you can expect in each of the lessons. In this section you'll be introduced to the fret map and fingering, as well as some basic music theory. There's also information on the Tuner, which you'll use as a reference to tune your guitar, and the Metronome, which will help you count time. In the Reference area is useful information about different types of guitars, open chords, scales and some chord theory.

To get started learning, click the 'Months 1 and 2' menu option and then click 'Month 1'. In the top-right corner of the lesson screen is a link to the associated ebook. Click this to open the 25-page book, which has handy lesson content. You can read this on your computer or print it out as a reference.

There are nine pages of lessons here, covering a full month of tuition. As you learn each chord, you can click on the image to hear it played, so you can see if the sound you're making is the same. Within a short period of time you'll be playing songs such as 'Hey Jude' from The Beatles and 'Amazing Grace'. By the fourth week you should be playing 'Candle in the Wind' by Elton John.

As you work through the lessons, you can play each song to hear how it's supposed to sound. You can also see what the timing and ideal speed is, so you can set the metronome to keep time for you.

stepbystep GET TO KNOW GUITAR ACADEMY



AFTER HOURS

COOL & NEW

PANASONIC VIERA TX-32LXD700A

PRICE $1,699 / **CONTACT** PANASONIC
PHONE 13 26 00 / **WEB** www.panasonic.com.au

LCD TVs are quickly displacing plasma models at the lower-cost end of the market — not every home needs a 42 or 50in big-screen plasma. It's here in the mid-range market that more-compact LCDs are a great option. This 32in (81cm) Panasonic LCD TV has only 1,366 x 768-pixel native resolution, so it's not 'full HD'. However, at this size, that native panel resolution looks quite good, despite not being 1080p. This is due to those pixels being spread over a smaller area (in technical terms, it has a smaller dot pitch). The panel has a comparatively low contrast range, though it's still better than most LCDs at this pricepoint. It also delivers a 100Hz frame speed to make watching fast-action sport or movies far easier on the eye. It features both analogue and HD digital TV tuners, with a picture-in-picture option and a range of inputs, including two HDMI inputs and one VGA input for PC use. You also get a composite video and stereo output for plugging in a video recorder. The remote control is excellent and allows quick changing of inputs and aspect ratios, with options for 14:9 and several zoom settings.

— Darren Yates
PC User says: This is a high-quality compact unit with all the features you'll need.

RAZER LACHESIS

PRICE $100 / **CONTACT** SKYCOMP TECH / **PHONE** (02) 9011 2078 / **WEB** www.razerzone.com

Razer is a company with a penchant for concentrating on performance and feel over the highfalutin extras offered by their competitors. Razer's much-anticipated new Lachesis was supposed to be its best mouse yet, with a super-sensitive 4,000dpi laser sensor and a nifty new shape. Unfortunately, the Lachesis is a bit of a mixed bag. On the one hand, it's undoubtedly the smoothest and most accurate mouse we've used, even at very high sensitivity. The higher dpi means you can get both outstanding speed and accuracy. However, there are a few design shortcomings and some show-stopping bugs that need to be ironed out. The most serious bug is x-axis locking, where you can't move the cursor left or right. This is admittedly sporadic — it happened around once an hour during testing, and blowing on the sensor fixed the problem — but it's frustrating nonetheless. The physical shape, with a wide front and narrow back, is also a bit unusual. We did initially find it a little uncomfortable, although we warmed up to it after a couple of days. Sadly, there are also no status lights, so there's no immediate way to tell what dpi setting you're using when switching on the fly. The configuration software allows a decent amount of fine-tuning and works well on the whole.

— Dan Gardiner
PC User says: This will be a great gaming mouse once the bugs are ironed out.

DVX555U SET-TOP BOX

PRICE $69 / **CONTACT** STRATHFIELD
PHONE 13 11 77 / **WEB** www.strathfield.com.au

Standard-definition set-top boxes have crash-dived in price of late and are as low as $29.95 from some retailers. However, this DVX555u is far better value, even at its $69 price tag. The big difference here is that with this one you can install your own IDE hard drive and turn it into a personal video recorder (PVR). Internally, the unit has an IDE interface cable and four-pin Molex power cable. You screw the drive into the base plate, power up the unit and format the drive. It can handle IDE drives of any size, with a basic 80GB drive giving you 55 hours of recording time. With Samsung's 250GB IDE drive selling for as little as $90, you can build a 250GB PVR for just $159. The interface isn't too clunky and, with its built-in electronic program guide (EPG), setting up timer recording is fairly easy. During testing we noticed there were some timing mistakes on the EPG's main screen, but when the incorrect programs were actually selected, they recorded correctly. The unit has composite, S-Video and component video output, plus antenna pass-through ports. Whether you use it as a set-top box or build your own PVR, at this price, you can't go too far wrong.

— Darren Yates

PC User says: A set-top box that you can turn into a cheap PVR.

MICROSOFT MOBILE MEMORY MOUSE 8000

PRICE $125 / **CONTACT** MICROSOFT
PHONE 13 20 58 / **WEB** www.microsoft.com/hardware

The Memory Mouse 8000 is a slightly chunky wireless mouse that connects to your PC with a wireless receiver. Also included is a slender USB cable that magnetically attaches to the end of the wireless reciever. So far, so cool, but its big trick is that the receiver isn't just for sending mouse signals and charging; it's also a 1GB flash drive. The performance of both the mouse and memory was quite good in our tests, although the mouse itself is on the small side — much like a notebook mouse. And while it's a cool idea, there are practical problems. Firstly, the magnetic cable is very slender indeed, so if you lose or break it, your mouse will die once the power runs out. A standard mini USB cable might not be as sexy, but it would be easy to replace. Secondly, at $125, the Memory Mouse is very expensive. It's been a while since 1GB of flash memory was worth anywhere near that, even with a decent mouse attached.

— Alex Kidman

PC User says: Works reasonably well, but doesn't really do enough to justify the cost.

MIO DIGIWALKER A702

PRICE $799 / **CONTACT** MIO / **PHONE** 1300 646 477 / **WEB** www.mio-tech.com.au

The Digiwalker A702 is the latest all-in-one GPS/PDA/mobile phone device from Mio. It boasts a number of updates over the previous model, including a retooled case, though strangely, it remains the same size and weight as the previous model. At 150g it's certainly no burden to carry around, especially considering all the individual devices it can potentially replace. On the GPS side of things, it has a 20-channel SiRFstarIII receiver, which allows the included MioMap 3.3 software to direct you where you want to go. The interface is easy to navigate and the buttons are big enough to use comfortably. The PDA functionality is as capable as you'd find on a conventional PDA; it runs Windows Mobile 6 and comes with 1GB of onboard storage, so there's plenty of room for applications. Data entry is via the mobile phone keypad, or you can bring up an onscreen keyboard and tap away at that — simply choose the method that feels right for you. As far as mobile phone functionality goes, the Digiwalker boasts tri-band network support with a 4-hour talk time and 200-hours standby battery life. The 3.2MP camera is a little clunky to use compared to the rest of the applications, but is passable nevertheless.

— Nick Mailath

PC User says: Great value if you make use of all the features.

BIO BYTES

AGES FROM 5 YEARS
PRICE BASE UNIT, $64.95; EXTRA TANKS, $27.95
CONTACT FUNTASTIC / **PHONE** 1800 244 543
WEB www.funtastic.com.au

Have you ever wondered what chance a Great White shark would have in a stoush with a T-Rex? How about a gorilla and a grizzly bear? OK, we know these match-ups are never going to happen in the real world, but on this handheld computer game, anything is possible. The device consists of the controller, which is powered by four AA batteries, and a detachable tank containing your creature — your original purchase will have either a T-Rex or a Great White shark, but you can buy tanks separately featuring five other sea creatures and a further five land creatures. Using the LCD, you practise and improve your creature's fighting skills through battles with some of the most fearsome beasts to ever exist; the animal in your tank responds to the controls as well. Bio Bytes can be played solo against the computer, but if you have a buddy with a Bio Byte creature, they can battle each other wirelessly. The second option is most likely to appeal to kids from around eight — the gameplay isn't all that challenging, so adding the element of competition is more likely to hold their interest.

— Gail Lipscombe

PC User says: Fun, but over-eights may tire of it.

NETGEAR SPH200D

PRICE $180 / **CONTACT** NETGEAR / **PHONE** 1300 361 254 / **WEB** www.netgear.com.au

The SPH200D is the little brother of the SPH101 Wi-Fi Skype phone. It lacks the latter's Wi-Fi connectivity, so it requires a transmitting base station to be placed somewhere. However, it has the added benefit of dual-mode operation, so you can use your landline or Skype, as suits your need. Aside from a lengthy 14-hour wait to initially charge the batteries, it works quite well, with a nice logical interface for selecting which provider you'll use for calls and clear call quality. The handset itself feels a little on the average side, with an overly squishy directional selector and a low-resolution display that seems to be the norm for Skype phones everywhere. It's possible to pair up multiple Netgear handsets to the SPH200D's base, although we only had a single review sample (additional phones cost around $129 each). The included speakerphone is also a nice bonus for conference calls and gave almost equivalent audio quality as the handset in our calling tests. The one big catch is that, like other Skype phones, it's unsuitable for emergency calling duties.

— Alex Kidman

PC User says: Good value for Skype users who don't want to be tethered to a headset and PC.

NAVMAN S90I

PRICE $650 / **CONTACT** NAVMAN
PHONE 1300 628 626 / **WEB** www.navman.com.au

The current top-of-the-line GPS device in Navman's range is the S90i, and, at this price point, you'd want bells and whistles aplenty. Thankfully, it doesn't shy away from that responsibility. It offers the very fun and useful NavPix technology, which allows you to find locations based on photos (it's the only S series model that does this properly by embedding a camera in the GPS itself), as well as support for TMC traffic data, trip logging, text-to-speech and Bluetooth mobile phone connectivity. Navman has also updated its rather aging interface to a point where it competes well against easy-to-use GPS options such as TomTom's. Our tests with the S90i did show it to be a touch quirkier than many other GPS systems, and at one point we had to abandon it for an hour when it consistently went stupid. That's something that a firmware update will hopefully fix. In the top end of GPS navigation, the S90i competes well and the NavPix tech is great for the permanently lost; however, we do wish it was just a touch more stable.

— Alex Kidman

PC User says: Packs useful features, although it's expensive and a little unstable.

Movies & music on the go

Nick Mailath tests gear for a high-tech road trip.

About pricing

The prices listed here are recommended retail prices and, as such, should be considered the top price to pay. A lot of the time you'll be able to bargain with vendors for a better price or wait until items are on sale to save a few dollars. Check out **www.ryda.com.au** for an idea of market pricing on a lot of car entertainment gear.

Upgrading an in-car entertainment system is something many people only think about after returning from a horror road trip. If you or your passengers spent long, boring hours in a car over the summer holidays, you'll know the value of an in-car DVD player or even a quality car stereo. If you want your car to be prepared for the next long trip, there are plenty of options on the market, so take a look at the stereos, screens and head units reviewed below to find a piece of equipment to suit your needs.

Buyer's checklist

* **Try to plan out your stereo before you start buying components, as this will help you assess what features you will need from your equipment.**
* **If you plan to upgrade components in the future, don't forget to factor this in when purchasing. You might be better off saving your money and waiting for the upgraded model than buying something that you're only going to use for a few months.**
* **If you don't plan to install the stereo yourself, get a quote for installation at the same time you purchase the stereo. You can usually get a better deal if the same store supplies and installs the equipment.**
* **Ask questions and search the internet if you decide you're going to install it yourself. There's a good chance that someone has already been through all the problems you're about to encounter.**

Tech terms

DIN. This is often used to refer to the size of a stereo. Most commonly available stereos are single DIN, but double DIN models are available, such as the Kenwood unit we tested in this roundup.

RCA. A common type of connector for audio and video signals seen on most consumer devices.

JAYCAR CS2275

PRICE $149.95
CONTACT JAYCAR ELECTRONICS
PHONE 1800 022 888
WEB www.jaycar.com.au

If you're looking to give your car stereo some extra bass, but don't want to sacrifice your entire boot to a massive subwoofer, something like this all-in-one unit would be ideal. The 8in subwoofer is housed in a ported enclosure, which also includes the amplifier. You simply connect the power and audio cables and you're ready to rumble. The only thing not included is a long RCA cable to go from your stereo to the box. All the connections go through a plug close to the box, so it can easily be removed should you need some extra space. The unit managed to output a decent punch once the crossover and gain were configured. It may not compare to bigger models with separate amplifiers, but you'd be hard pressed to find better performance from something this size and at this price. An adapter is also included so that the sub can be used on stereos that aren't equipped with a dedicated subwoofer out.

PC User says: Good bang-for-buck performance and an easy-to-do upgrade.

JVC KD-AVX11

PRICE $769 / **CONTACT** JVC
PHONE 1300 728 225 / **WEB** www.jvc-australia.com

The KD-AVX11 is a full-featured head unit with a built-in 2.7in widescreen display on the front. While 2.7in may sound too small to be useful, it's actually not too bad — you can use it to watch DVDs (including DivX movies) or you can use the display with a connected reversing camera. It also has video output to allow you to connect separate screens in the future. The face is motorised and folds down to reveal the optical drive slot, and the display angle is adjustable. The included remote gives you control over just about everything, so be careful about relinquishing it to the back seat. The menu system is easy to navigate via the buttons on the face, although the volume knob found on most JVC models has been replaced by buttons. We're told new models will be released shortly, so keep an eye out for them — and check for any specials on current models.

PC User says: Tons of features with room to expand.

JAYCAR QM3782

PRICE $299 / **CONTACT** JAYCAR ELECTRONICS / **PHONE** 1800 022 888 / **WEB** www.jaycar.com.au

Installing a screen in your car instantly adds another dimension to your in-car entertainment system, and this 7in motorised model is no exception. It's a single DIN unit about the size of a standard stereo — the screen comes out the front and folds up. It's completely motorised, so all this happens at the push of a button. It has a built-in TV tuner and three video inputs, which should be ample for most setups. The speakers built into the back of the screen are handy if you're installing the screen as a standalone TV, but for in-car use, the car's stereo will sound better. The screen resolution of 480 x 234 isn't quite as high as some screens, but for regular video it does a reasonable job. The angle of the screen is also adjustable, making it easily visible from a number of positions.

PC User says: **A well-priced monitor for your car.**

JAYCAR QM3785

PRICE $249.95 / **CONTACT** JAYCAR ELECTRONICS / **PHONE** 1800 022 888 / **WEB** www.jaycar.com.au

This budget head unit boasts a decent feature set and, while it may not look as good as other models on the market, it gets the job done with minimal fuss. The display is bright and clear but only shows basic information. Using a monitor in conjunction with the head unit gives a lot more detail, especially when playing files from a USB key or memory card. There's a USB Mini-B socket on the front with a small cable that has a standard USB socket for your storage devices. When you plug something in, it's scanned for compatible files that are listed in an easy-to-navigate file manager. The included remote is essential, as there are limited buttons on the unit itself. Its 45W per channel output is on par with most models and will provide plenty of power for just about any speakers.

PC User says: **Might not be as flashy as some, but it's certainly good value.**

PIONEER AVH-P5950DVD

PRICE 1,999 / **CONTACT** PIONEER / **PHONE** 1800 988 268 / **WEB** www.pioneer.com.au

The 5950DVD is the 'works burger' of car stereos. It contains just about everything you need besides speakers. The motorised 7in touchscreen is nicely accented by the gloss black bevel surrounding it. The menu system is responsive using the touch panel and the buttons are large enough to read quite easily. The onboard amplifier is rated at 50W for each of the four channels, but RCA outputs are also included for the front, rear and subwoofer channels should you want to use an external amp. It also has video inputs and outputs and even a connection for your iPod, which can then be controlled from the head unit itself. The lower section of the front panel has a simple display and few buttons, adding to the unit's refined look.

PC User says: **If you can get past the staggering price, there's more features than you can poke a stick at.**

KENWOOD DDX6039

PRICE $1,699 / **CONTACT** KENWOOD
PHONE 1300 366 635 / **WEB** www.kenwood.com.au

The DDX6039 stands out from the crowd here as it's a double DIN-sized model, meaning it takes up two standard stereo slots. Just about the entire front panel is taken up by the touchscreen, which is slightly under 7in in size. The screen is motorised and slides down and out, so you can access the optical drive. As with the Pioneer model above, the touch interface is responsive and easy to use. It's DVD compatible but unfortunately it will only play DVD video — you can't play MP3s direct from a DVD. The unit has all the outputs and inputs you'd expect at this end of the price range. The ability to back up audio and video settings is a huge bonus for anyone who has to set up the stereo from scratch every time they disconnect the battery.

PC User says: **The unit looks more like a factory option than an after-market addition, but it isn't cheap.**

SONY XSGTF6935B

PRICE $129 / **CONTACT** SONY
PHONE 1300 137 669 / **WEB** www.sony.com.au

If you have the room to fit them, these 6 x 9in speakers will be a good choice for those who want a little extra bass. These particular speakers are a three-way unit, meaning there are three separate drivers in each speaker. The larger cone caters to the low frequencies, while the smaller ones take care of the mid-range and highs. Unfortunately, due to their size they won't fit in most standard speaker mounting points; however, if you're up for a little DIY modification, they can usually be squeezed into the parcel shelf. If that's not an option, they can be installed into separate boxes that can then be placed in the location of your choice. The sound produced was good, although the highs seemed a little overbearing — nothing that can't be fixed with a tweak of the equaliser settings, though.

PC User says: An ideal replacement for some tired speakers, but check that you have room.

PIONEER DEH-P9850BT

PRICE $949 / **CONTACT** PIONEER
PHONE 1800 988 268 / **WEB** www.pioneer.com.au

This top-of-the-line CD tuner from Pioneer definitely costs a pretty penny, but the DEH-P9850BT also has loads of features to justify the price — providing you need them. The screen is one of the first things you notice, not for its size, but for its vivid colours and cool-looking 3D menu system. Strangely, the head unit doesn't support DVDs, which was a little disappointing. You can connect an iPod, although it requires the use of an external adapter. The audio section of this unit is where a lot of the premium features are: there's a highly customisable EQ, along with the auto EQ and time alignment feature, which uses the included microphone to self-tune the stereo to the environment. Built-in Bluetooth allows connection to supported handsets for hands-free calling to round out a huge feature set.

PC User says: If you're after premium audio, then you'll have to be prepared to pay a premium price.

SONY CDXGT370

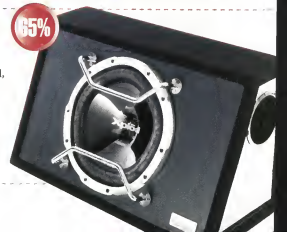
PRICE $299 / **CONTACT** SONY
PHONE 1300 137 669 / **WEB** www.sony.com.au

This head unit is simple yet functional. It has all the features you need in a car stereo, including auxiliary input, MP3 and WMA playback, 52W per channel power output and a basic EQ. The face houses an informative display and the buttons are well placed and clearly labelled. There is an RCA output on the back for connection to a subwoofer and the unit can also control a CD or MP3 stacker if there's one installed. The face is detachable which is an effective theft deterrent. This basic head unit has no fancy extras, but it's a decent (if somewhat pricey) replacement for a factory stereo if you don't need any special features.

PC User says: Functional and nice to use, although it seems a little overpriced.

SONY BOX124P5B

PRICE $249 / **CONTACT** SONY / **PHONE** 1300 137 669 / **WEB** www.sony.com.au



This 12in subwoofer is a little bit intimidating when released from the box. It's a huge unit with mirrored sides and a set of speaker terminals on the back for connection to a suitable amplifier. The 1,300W stamped on the speaker cone may have you thinking you're going to need a huge amp but don't be afraid, as 300W is more than enough to get it pumping. The ported enclosure delivered some strong bass as expected, although there did seem to be a slight whistle in the port, more than likely due to the air rushing past a rough edge. It wouldn't be overly noticeable from the boot, but it's there.

PC User says: Big bass, but the whistle is distracting.

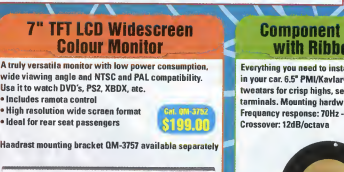
Jaycar electronics

YOUR ONE STOP SHOP FOR CAR AUDIO & ENTERTAINMENT

In-Dash DVD Player with Multi-Media Support and Detachable Face

This CD player also supports DVD, VCD, MP3 and AM/FM radio. You can also use an SD card or other media player via the mini USB port. The four channel amplifier is rated at 45WRMS per channel and has line level audio and sub-woofer outputs. Fits a standard DIN opening, and includes mounting hardware and remote control.

- Audio and video outputs
- Full function remote control
- 4.3 and 16:9 aspect ratios



Cat. QM-3785
$249.95

Under-Seat Active Subwoofer

This integrated amp/subwoofer will fit under your car seat and provide that seat-of-the-pants bass experience. Line level (RCA) inputs or speaker signal inputs. Includes a wired remote control unit with mute and volume controls.

- 130mm polycone woofer
- Power: 90W RMS
- Frequency response: 80 - 200Hz
- Dimensions: 288(L) x 200(W) x 69(H)mm

Cat. CS-2273
$129.95

7" TFT LCD Widescreen Colour Monitor

A truly versatile monitor with low power consumption, wide viewing angle and NTSC and PAL compatibility. Use it to watch DVD's, PS2, XBOX, etc.

- Includes ramota control
- High resolution wide screen format
- Ideal for rear seat passengers

Cat. QM-3752
$199.00

Headrest mounting bracket QM-3757 available separately

Component Car Speakers with Ribbon Tweeters

Everything you need to install a good quality split system in your car. 6.5" PMI/Kevlar® composite cones, ribbon tweeters for crisp highs, separate crossovers with screw terminals. Mounting hardware included.
Frequency response: 70Hz - 40kHz
Crossover: 12dB/octava

Cat. CS-2338
$299.00

Full Range 5 Channel Car Amplifier

Beef up your sound with this powerful 5 channel amp. Features adjustable gain, variable high-pass filters and adjustable phase etc.
Specifications:
Power @ 4ohm 14.4V: 60WRMS x 4 ch
+ 225WRMS x 1ch
Power Bridged @ 4ohm 14.4V
180WRMS x 2 ch +
340WRMS x 1ch

Cat. AA-0656
$499.00

SEE WEBSITE FOR OUR FULL RANGE OF CAR AUDIO & ENTERTAINMENT EQUIPMENT

USB Missile Launcher

Great fun for young & old. Computer controlled pan, tilt & fire.

Cat. QE-4872
$39.95

REVERSING SAFETY

2.4GHz Wireless Reversing Camera Kits

Simply splice the monitor and camera power lines into the car's reversing light cable and they will automatically switch on when you select reverse gear. Once activated the camera and monitor deliver a clear view of the area behind your car. System includes 1 x 2.4" wireless colour LCD screen and 1 x Colour CMOS camera.

- Camera viewing angle 110°

Two camera styles available

Cat. QC-3725
$249.00

Cat. QC-3727
$269.00

Skype® Mouse

This looks just like a normal USB optical wheel mouse, but if you flip up the lid you'll find a full-on Skype® phone. Works with common VoIP systems and lets you to make free calls to other computers and low cost calls to land lines and mobiles.
See our website for more great products

Cat. XH-5138
$59.95

NEW SOUTH WALES
Albury Ph (02) 6021 6788
Alexandria Ph (02) 9699 4699
Bankstown Ph (02) 9709 2822
Blacktown Ph (02) 9678 9669
Bondi Junction Ph (02) 9369 3899
Brookvale Ph (02) 9905 4130
Campbelltown Ph (02) 4620 7155
Erina Ph (02) 4365 3433
Gore Hill Ph (02) 9439 4799
Hornsby Ph (02) 9476 6221
Newcastle Ph (02) 4965 3799
Parramatta Ph (02) 9683 3076
Penrith Ph (02) 4721 8337
Rydalmere Ph (02) 8832 3120
Silverwater Ph (02) 9741 8557
Sydney City Ph (02) 9267 1614
Tamworth Ph (02) 6751 7803
Tweed Heads Ph (07) 5524 6566
Wollongong Ph (02) 4226 7089

VICTORIA
Coburg Ph (03) 9384 1811
Frankston Ph (03) 9781 4100
Geelong Ph (03) 5221 5800
Melbourne Ph (03) 9663 2030
Ringwood Ph (03) 9870 9853
Springvale Ph (03) 9547 1022
Sunshine Ph (03) 9310 8066
Thomastown Ph (03) 9465 3333

NORTHERN TERRITORY
Darwin Ph (08) 8948 4043

QUEENSLAND
Aspley Ph (07) 3863 0099
Cairns Ph (07) 4041 0747
Ipswich Ph (07) 3202 5800
Mooloolaba Ph (07) 5453 0777
Maroochydore Ph (07) 5479 3511
Mermaid Beach Ph (07) 5526 6722
Townsville Ph (07) 4772 5922
Underwood Ph (07) 3841 4888

AUSTRALIAN CAPITAL TERRITORY
Belconnen Ph (02) 6253 5700
Fyshwick Ph (02) 6239 1801

WESTERN AUSTRALIA
Maddington Ph (08) 9493 4300
Northbridge Ph (08) 9328 8252

SOUTH AUSTRALIA
Adelaide Ph (08) 8231 7355
Clarelly Park Ph (08) 8276 6981
Gepps Cross Ph (08) 8262 3200

TASMANIA
Hobart Ph (03) 6272 9955

NEW ZEALAND
Christchurch Ph (03) 379 1662
Dunedin Ph (03) 471 7934
Glenfield Ph (09) 444 4628
Hamilton Ph (07) 846 0177
Manukau Ph (09) 263 6261
Newmarket Ph (09) 377 6421
Palmerston North Ph (06) 353 8266
Wellington Ph (04) 801 9005
Freecall Orders Ph 0800 452 9227

FREECALL ORDER HOTLINE: 1800 022 888 **WEBSITE: www.jaycar.com.au**

SUBSCRIBE AND YOU

EACH VALUED AT $250

SUBSCRIBE OR RENEW YOUR CURRENT SUBSCRIPTION TO *PC USER* AND YOU COULD WIN A LINKSYS NAS20 VALUED AT $250 EACH – THERE'S 18 TO BE WON!

LINKSYS
A Division of Cisco

Now you can quickly and easily add storage space to your network with the Linksys Network Storage System. This standalone network appliance features two available SATA hard drive bays so you can attach as much storage as you need now, and add more later as your storage needs grow. For even more expandability, there are two USB ports that let you connect readily available USB 2.0 hard drives for even more storage space — or plug in a USB flash disk for a convenient way to access your portable data files.

The Network Storage System features built-in one-touch backup — just push the button to start a backup of your important files.

The Linksys NAS200 network-attached storage device

- Ethernet-connected network storage with two available SATA hard drive bays adds shared storage directly to your network
- Add even more storage with two USB 2.0 ports for hard drive or flash USB storage devices
- Securely share files locally or through the internet (FTP, HTTP) with no dedicated PC needed
- Advanced backup software included
- Built-in media server for streaming to PC or UPnP AV digital media adapter

OR RENEW COULD WIN!

Save $27.45!

Subscribe to *PC User* today and enjoy the following benefits:

- **Australia's most practical computer magazine – the best help, tips and tweaks for topics ranging from Windows to DVD burning.**
- **Access to exclusive software including full working versions, video guides and even *PC User*'s own software!**
- **PLUS subscribe before March 4, 2008 for your chance to WIN 1 of 18 Linksys Network Attached Storage Systems!**

3 easy ways to subscribe:

VISIT ONLINE
www.pcuser.magshop.com.au

CALL US
on 13 61 16 and quote 'M803PCU'

MAIL
the reply paid coupon provided

Authorised under Authorised under NSW Permit No. LTPS/08/00149, ACT PERMIT No. TP08/0075, SA PERMIT No. T08/101. For full terms and conditions please see page 112. Please see page 5 for our Privacy Notice. Open to Australian residents only. Offer expires March 4, 2008.

Fuel for the fire

The ***PC User* team** takes a sneak peek at upcoming game releases, starting with an imaginative new chapter in this shooter series.

FRONTLINES: FUEL OF WAR

PLATFORM PC / **PRICE** $99.95
CONTACT THQ / **PHONE** (03) 9573 9200
WEB www.frontlines.com
RELEASED FEBRUARY 2008

Trauma Studios has struck out on its own and become Kaos Studios. It has been working hard on this day-after-tomorrow *Battlefield*-esque shooter, using the experience garnered from the stupidly successful *Desert Combat* mod. *Frontlines* takes a look at where military technology is heading in a fictional conflict over oil. In 2024, battles will be won by capturing spawn points with multi-talented soldiers who can fly or drive any vehicle. OK, it's not exactly plausible, but it's the perfect recipe for a large-scale online shooter. In the multiplayer, progress is made by capturing control points and pushing the front line toward the enemy base. I grabbed a few multiplayer games and it's shaping up to be a solid online shooter — I particularly like the separation of loadouts and special role skills. Choosing a sniper, for example, will allow you to take out infantry; you could also select the EMP role, enabling you to disable vehicles and nail enemies that make a run for it. The Unreal 3 engine keeps things looking pretty and I'm keen to see the much-touted distinction between the *Battlefield 2*-style multiplayer and the more focused, objective-based single-player campaign.
— Mike Channell
PC User says: Promising multiplayer shooter.

TOM CLANCY'S RAINBOW SIX VEGAS 2

PLATFORM PC / **PRICE** $99.95
CONTACT UBISOFT
PHONE (02) 8587 1800
WEB http://rainbowsixgame.uk.ubi.com
RELEASED MARCH 2008

Surprisingly enough, for a console-orientated effort, the original *Rainbow Six Vegas* did consume a fair amount of office LAN time last year. A sequel, to our minds, seemed to be an inevitability — let's just hope it's fully fleshed-out rather than simply *Rainbow Six Vegas 1.5*. *Rainbow Six Vegas 2* will take place during the original game's conflict, but from the perspective of another Rainbow team leader called Bishop. The newly refined drop-in/drop-out co-op means a mate can provide reinforcements at any time during the single-player campaign. You'll probably need the help, too — the AI has apparently been ramped up considerably. A new 'leapfrog' system allows the AI members of your team to negotiate the various gaudy corridors without tripping over each other. There may not be much extra visual fluff (the game looks frighteningly similar to the previous instalment), but its pedigree suggests an extremely solid FPS.
— Mike Channell
PC User says: Hopefully this will add something new to the series.

PIRATES OF THE BURNING SEA

PLATFORM PC
PRICE $99.95
WEB www.piratesoftheburningsea.com
RELEASED FEBRUARY 2008

We've been desperately awaiting this sea-faring MMORPG for a long while and I've finally had a chance to get in at the end of the closed beta test. By the time you read this, the servers will be live and you'll be able to ensconce yourself in the cutthroat world of high seas shenanigans. It runs like a cross between *Age of Pirates* and *Eve Online*, which is not a bad thing at all, so long as you can look past the quite inaccessible tutorial section. Fingers crossed that by the time it reaches the general public this will have been sorted, as it makes the early exchanges a trial. Basically, you've got a ship, you've got a crew and you've got a large expanse of the tropics to explore and make your own. The exciting feature is the *Eve*-style part: the player economy. You can set up warehouses and shipyards at certain ports to allow you to trade more effectively, but mainly so you can start to fashion your own tallships. There are possibilities — you just need to persevere. However, we're reserving judgment until its maiden voyage.
— Dave James
PC User says: This online multiplayer game appears to be squarely on course to deliver an epic adventure on the high seas.

We Know All the Ins and Outs

Out of luck? With an Advanced Digital Video Converter from Canopus, you won't need luck to make all the right connections. ADVC products are compatible with all video cameras, decks and editing systems — Windows®- or Mac OS®-based.

It's what's inside that counts! At the heart of every ADVC, the innovative Canopus codec chip provides the industry's highest picture quality preservation and A/V synchronisation.

ADVC300 is the ultimate choice for bidirectional analog-digital video conversion. Featuring 3D digital noise reduction, frame synchronization and Line Time Base Correction (LTBC), ADVC300 instantly cleans, stabilizes and preserves old VHS and Hi8 tapes in clean DV

ADVC110 is the ideal device for capturing and outputting analog video from any FireWire-equipped notebook or desktop computer. There are no drivers to install and, when used with a 6-pin FireWire cable, a power supply is not required.

ADVC55 is a compact, easy-to-use digital video converter that connects VHS, Hi8 and other analog video equipment to a computer. There are no drivers to install and, when used with a 6-pin FireWire cable, a power supply is not required.

Visit www.canopus.com/advc

grass valley
A THOMSON BRAND

video innovation canopus

E&OE. All trademarks or registered trademarks are properties of their respective holders

The art of modern warfare

Tom Francis shows you how to emerge victorious from *Call of Duty 4*'s multiplayer campaign.

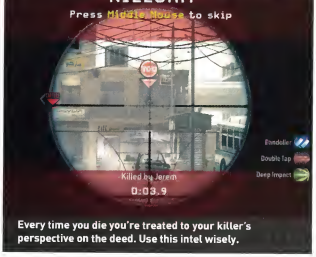
CALL OF DUTY 4: MODERN WARFARE

PLATFORM PC / **PRICE** $99.95
CONTACT ACTIVISION
PHONE (02) 9869 0955
WEB www.charlieoscardelta.com

Offline, *Call of Duty 4: Modern Warfare* (COD4) is a cautious game of tactics and stealth. Online, it's an abattoir. It becomes the single-player campaign's most hectic clashes, except where every combatant is an intelligent, angry human intent on hunting you down. It's one of the most fast-paced, brutal and downright frightening multiplayer experiences around. But if you know how to survive it, it's also one of the most fun.

The first thing you need to understand about COD4 multiplayer is that it's objective-based and so should you be. Aside from the rare deathmatch servers, there's a goal marked on your screen in each of the game's many modes. And you'll be amazed how often you can jump into a game and win it for your team in minutes. All you have to do is laser-focus on the task at hand, while others dally behind cover taking potshots at infinitely respawning foes.

The temptation to hang back is largely the fault of COD4's new incentives: a kill streak entitles you to call in radar or air support, and kills give you experience towards your next unlockable 'perk'. We'll be talking more about those later (see 'The perfect loadout' opposite), but for the time being, ignore them. You'll get promoted through the ranks far quicker for completing objectives than killing people, and you still get the benefit of both radar and air support when it's your camping team-mates who are calling it in.



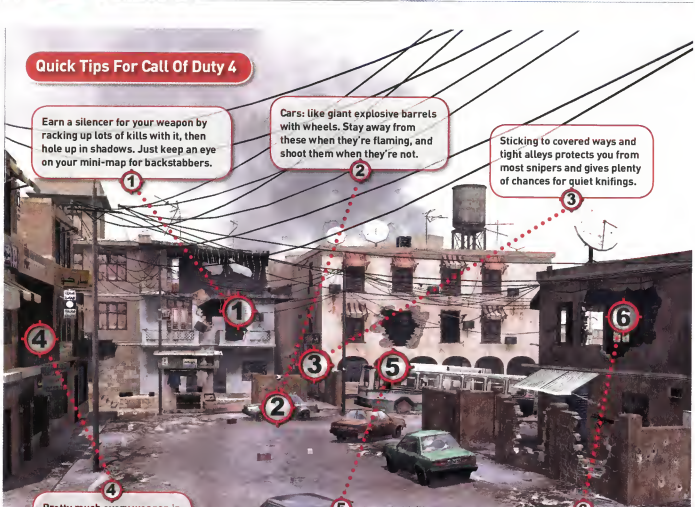
Every time you die you're treated to your killer's perspective on the deed. Use this intel wisely.

_GAME MODES

* **Headquarters.** Teams must race to capture one randomly selected spot on the map. Once one team has it, their score increases steadily for as long as they can defend it, but their players can no longer respawn. When it's finally taken over, a new HQ pops up elsewhere.
* **Sabotage.** A bomb is in the centre of the map, which each team must try to take to the enemy base and plant. The person carrying the bomb is highlighted on everyone's screen and, once it's planted, the enemy team can defuse it if they get to it.
* **Search and destroy.** One team must plant the bomb, the other must stop them or defuse it — and no respawning, you. The only difference is that there's only one bomb site, and the bomb can be replanted if defused.
* **Domination.** Three control points up for the capturing by either team, each of which contributes to the score of the team holding it. Teams try to hold most or all of them for as long as possible to rack up the most points.
* **Deathmatch.** In team-based or free-for-all flavours, this is the only mode in which it's worth holing up and killing people; in every other, it's better to dash for the objective than hang around scrapping.

_SITUATIONAL AWARENESS

You may not be able to rely on your team-



mates, but you can rely on your mini-map. It's the sole difference between the guys at the top of the scoreboard and the ones at the bottom. Even if you haven't notched three kills in one life to earn your radar sweep, you can still see enemies on the mini-map if anyone else on your team has used one lately.

In the rare case that no-one has, just being able to see your team-mates is often all you need. If there are three green arrows outside that doorway to the HQ, you can safely turn your back on it to cover the other one. Even if your squaddies are incompetent, they work like budgerigars in a coalmine: the moment they wink out, you know there's trouble ahead. Or rather, behind. COD4 is all about bullet penetration. If there's an enemy behind cover, you can nail him through it.

THE PERFECT LOADOUT

There's no shortage of great perks to use and you'll burn through those early promotions in no time at all to earn them. But finding the best three that aren't exclusive, and picking a weapon to go with them, is a fine art. We know how you hate fine art, so we've done it for you. The fast-paced objective-based game modes mean that hanging back and sniping rarely wins you the game. So you always want to pick the most powerful mid- to short-range fully automatic weapon you can get. Nothing matches the P90's silly rate of fire, huge clip, quick reload and surprisingly decent from-the-hip accuracy for those impromptu killings the modern man just doesn't have the time to prepare for.

The vicious anti-personnel mines are useful in almost every mode — there's always something you need defended, some building you know the enemy will blunder into. Place them around corners, since they're easily spotted and neutralised by enemy fire.

Infinity Ward didn't want to disadvantage new players too much, so they let you have one of the best perks in the game straight off. Juggernaut just makes you tougher, and in chaotic firefights nothing's more useful than that.

Jesus evidently went way too far — all you need to qualify as a martyr is to drop a live grenade every time you die. This causes havoc, and usually death, any time you're killed in close quarters or tight spaces, particularly to those smug knife-jockeys.

Magic mushrooms

The ***PC User*** **team** reviews the hottest game releases for PC and consoles.

With the help of some stars and mushrooms, Mario gets really high in his latest 3D adventure.

SUPER MARIO GALAXY

PLATFORM Wii / **PRICE** $99.95 / **CONTACT** NINTENDO
PHONE (03) 9730 9822 / **WEB** www.supermariogalaxy.com

It's taken almost a year, but Nintendo's Wii console finally has its definitive Mario game, and overall it's a dazzling — although occasionally vertigo-inducing — experience. *Super Mario Galaxy* is the third Mario game to use the 3D perspective and it works better here than ever before. The plot once again revolves around saving Princess Peach from Bowser, but this time it's set in space, with a widely varied series of small 'planetoids' making up the individual levels. The main goal is to recover 120 special Stars (however, as in previous 3D Marios, you don't have to find every one to complete the game). The Stars have been scattered about in different galaxies, which are composed of several planetoids; in typical Mario style you must navigate from one to another by running, jumping and avoiding (or confronting) baddies until you finally reach the Star.

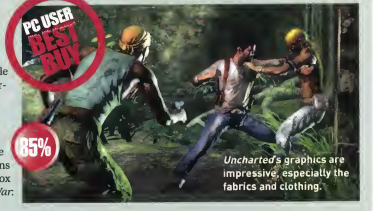
Gravity plays a large part in the game; it's often possible to run completely around circular planetoids — even upside down — which can be a little head-spinning to begin with. The levels themselves are gorgeously rendered, with bright, colourful graphics. So, despite the Wii's limited horsepower, *Super Mario Galaxy* is a visual feast. The game moves along at a good clip and it's excellent in terms of variety — there's constantly new gameplay elements being thrown at you, including power-ups and mini-games, and there's a strong emphasis on exploration and puzzle-solving. It's not too difficult overall and the controls work well, although the camera angles can occasionally be frustrating, and there's a few frustratingly hard sections in there, too.

— Dan Gardiner

PC User says: The best 3D Mario game to date and a must-have for Wii owners.

UNCHARTED: DRAKE'S FORTUNE

PLATFORM PS3 / **PRICE** $109.95 / **CONTACT** SCEA
PHONE 1300 365 911 / **WEB** www.unchartedps3.com



Uncharted's graphics are impressive, especially the fabrics and clothing.

Veteran PlayStation developer Naughty Dog's new PS3 action/adventure game is one well worth playing. It successfully combines a strong (if slightly camp) storyline with great graphics, convincing voice acting and solid, fun gameplay. In it, you take on the role of Nathan 'Nate' Drake, a modern-day treasure hunter who claims descent from famed English ship captain and privateer Sir Francis Drake. Nate's trying to track down his 16th century ancestor's secret treasure, a journey which involves trekking through jungle ruins, solving ancient puzzles and, of course, shooting at lots of bad guys. The graphics are good, with impressively rendered outdoor scenes, although they're occasionally a little too glossy and colourful to be considered realistic. *Uncharted*'s gameplay mostly consists of *Prince of Persia*-like terrain-hopping, in which you climb, leap, scramble and swing your way through crumbling jungle ruins, and cover-based combat, where you take out baddies with a variety of weapons. The shooting sections play like the Xbox 360's *Gears of War*: if you expose yourself to enemy fire for more than a few seconds, you'll fall over in very short order. The key is to keep hidden behind cover, then pop out and fire a few rounds and quickly duck back. It's fun for the most part but can get a little repetitive when you're facing off against 10 or more enemies. A handful of vehicle combat levels, where you must take out pursuing baddies using a jeep-mounted gun, and some upstream jet ski challenges help add a little more variety. The game's significant weaknesses are that it's very linear — there's really no deviating from the set path — and there's little innovation in terms of gameplay. That said, the game is nicely polished and compelling enough that these issues don't really matter.

— Dan Gardiner

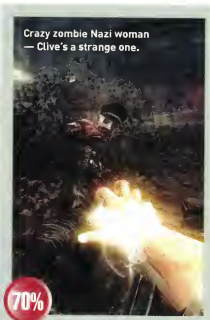
PC User says: A fun, entertaining romp that's well worth picking up.

85%

BLAZING ANGELS 2: SECRET MISSIONS OF WWII

PLATFORM PC / **PRICE** $89.95
CONTACT UBISOFT / **PHONE** (02) 8587 1800
WEB http://blazing-angels.uk.ubi.com/secretmissions

Don't get me wrong, I love a good steak, but every so often you get a hankering that can only be quenched by a juicy cheeseburger. Fortunately, that's exactly what *Blazing Angels 2* provides: meaty action with a healthy dollop of cheese on top. You play the daring captain of a secret squadron of WWII fighter pilots, tasked with the sort of missions that are beyond the wit of your average flyboy. The result is a collection of thrilling adventures that take place around the globe. It's all deeply reminiscent of, and clearly inspired by, *Crimson Skies*. *Blazing Angels 2* has beautifully detailed backdrops to swoop around. The cityscapes, notably Paris and Rome, are chock-full of recognisable landmarks and densely packed with buildings. There's a ton of variety in the missions, from dropping beautiful spies off on moving trains to battling a German Zeppelin by the pyramids of Cairo. The multiplayer mode is also healthy, with the standard online deathmatch modes and co-operative play throughout the entire campaign. While the targeting system can be a bit clunky, the game is Hollywood dogfighting nearly at its finest — just make sure you switch from the dire arcade handling to sim mode in the Options menu.
— Mike Channell
PC User says: A ton of WWII air battle fun.



70%

CLIVE BARKER'S JERICHO

PLATFORM PC / **PRICE** $79.95
CONTACT ATARI / **PHONE** 1800 060 605
WEB http://au.codemasters.com/jericho

Jericho has the dubious honour of being the squelchiest game I've ever played. Every spare surface is covered in the most disgustingly realistic gunk ever to be committed to code, and enemies' spilled guts glisten horribly. Unfortunately, that doesn't necessarily make it a great shooter. *Jericho* sees you put in command of a squad of colourful characters sent out to deal with occult threats — a sort of black leather-clad *Ghostbusters* arrangement. Each one has their own talent, with varying degrees of usefulness, and it's your character's death that is the vehicle for the game's main contrivance. Once your character has been offed in an early cut scene, you gain the ability to switch between each of the team on the fly. It's a reasonably neat mechanic, but you'll generally only switch when forced, either by the near-constant incapacitation you'll suffer or otherwise a character-specific obstacle. Team that with a less-than-solid base of repetitive shooting, dull levels and a storyline that utterly failed to engage or scare me, and you end up with an underwhelming amalgam.
— Mike Channell
PC User says: Interesting ideas, but they haven't translated well to the game.

BLACKSITE AREA 51

PLATFORM PC / **PRICE** $69.95
CONTACT RED ANT / **PHONE** (02) 9429 3400
WEB www.blacksitegame.com

Midway has created what is quite honestly an absolutely dreadful game. I was expecting the GeForce 7950 GX2 nestling in my PC to be quite happy running this game. Unfortunately, even at 1,024 x 768 it was running at completely unplayable frame rates. It wasn't until I shoe-horned in an 8800 GTX that I was able to play the game. To be honest, though, my life would've been a lot happier had I not made the change; after all, I'm never going to get back the five to six hours that it took me to finish this horror of a shooter. The prologue has the main protagonist, Aeran Pierce, out in Iraq special ops-ing his way around hidden bunkers looking for weapons of mass destruction, finding some freaky research subjects and dumping his mate on the way out. Fast forward a few years and the Nevada desert is filled with crazies and Area 51 turns out to have a similar research bunker sat beneath it, recycling dead grunts and turning them into Reborns. And guess where your buddy ends up? The game levels are painfully linear and there appears to be simply no effort being made to disguise the fact that you are meandering your way through an artificial maze, closed in by invisible barriers and low wooden fences that are both indestructible and insurmountable. Put simply, *BlackSite* is soulless and ugly. Avoid it like the plague.
— Dave James
PC User says: Five or six hours of totally joyless shooterage.

PUZZLE QUEST: CHALLENGE OF THE WARLORDS

PLATFORM PC / **PRICE** US$19.99
WEB www.gamersgate.com

In a time of legend, when heroes walked the land, justice could be found in . . . a game of *Bejewelled*? Strange, but true. *Puzzle Quest* takes a traditional role-playing setting, complete with character classes, magic spells to learn and quests to undertake for gold and glory; however, once you get into a fight, it all comes down to matching symbols. That's a simplistic description, though. You need to play smart to collect the right kinds of manna to cast spells, think ahead to force your opponent into dumb moves and make best use of your character's abilities. While not deep, there's more to it than meets the eye. There's no penalty for losing a battle and the empire-building element offers a decent amount of structure. However, beware: the hint system is a filthy cheat, constantly telling you to make moves that benefit the computer player, and too many extended sessions may whittle away the charm of the basic puzzle game. That aside, this is one of the most fun puzzle games since *Bookworm Adventures*. It's a great way to kill time when you really should be working.

— Richard Cobbett

PC User says: Simple yet unbelievably fun to play.

SEGA RALLY

PLATFORM PC / **PRICE** $89.95
WEB www.sega.com

Having played *Sega Rally*, I've developed an automotive itch that can only be scratched by taking a high-powered 4x4 and churning up vast tracts of arable land. The game's party piece is undeniably impressive: large portions of mud, clay and snow on its courses can be carved up into a rutted, often waterlogged mess, which then affects how you approach the next lap. Stray too far out of the line that's been carved and you'll end up wallowing in the thick stuff and losing positions. It's a remarkably realistic feature for a game that's pitched as an arcade racer, but with rally being all about battling the surface beneath you, it's an entirely welcome innovation. Couple these ever-changing circuits with the fine selection of satisfying rally cars and solid handling and it's a winning formula. It's a shame then that there are other elements that don't quite sit with the arcade stylings — most notably the difficulty curve. The other major problem is the large amount of repetition during the championship — there are 15 standard courses, but they're revisited endlessly, so it feels like far fewer. The career mode may be disappointing, but the online mode shares none of these problems. When each of the six driving seats is filled with a human personality, the game's tactile playground really comes alive.

— Mike Channell

PC User says: If you're looking for a quick off-road razz, this will definitely satisfy.

BEOWULF

PLATFORM PC / **PRICE** $89.95
CONTACT UBISOFT
PHONE (02) 8587 1800
WEB http://playbeowulf.com

Brace yourself, this is probably the worst movie licence since *ET* on the Atari 2600, and that allows for a good quarter of a century of shoddy tie-ins. The game is an excruciating combination of generic hitting, generic clambering and, when a challenge larger than a horde of barbarians appears, desperately awful rhythm action, quick-time event and button-hammering portions. It's difficult to explain just how dreadful these mandatory mini-games are, but an early example is the rowing section, which will no doubt be the point where many players start to question their sanity. Here, if your finger lingers on the W key for even a moment longer than necessary during the short beats, you fail the challenge and have to start again. This, as you can imagine, makes you want to snap your keyboard in half over your knee and drive the shattered halves into your temples. That's not to say the game doesn't have surprises in store. Well, one surprise: the startling nudity of Grendel's mother. Thankfully, *Beowulf* is so stunningly terrible, barely anyone will stick around long enough to be embarrassed by it.

— Mike Channell

PC User says: Absolutely appalling.

BUYER'S GUIDE

PC SPECIFICATIONS / REVIEW HIGHLIG

Your perfect PC

The ***PC User* team** selects the best-value PC specifications for your needs.

In this regular column we help those who want to order a custom-built PC (or build their own system) using the best-value components available. We've recommended a minimum of 1GB of memory because, sooner or later, you'll probably want to upgrade to Windows Vista.

In the table, we've also recommended a base system and provided multiple upgrade options for different needs. This is in response to the myriad of components available and the increasingly diverse needs of users.

For the base system, we have recommended an Intel Core 2 Duo system because it's the best-value all-round chip available. For gamers we've recommended two alternative motherboards: one Intel-based board with CrossFire support, and one AMD-based board with SLI. Both offer good-value gaming with support for dual graphics cards. However, don't feel obliged to buy two graphics cards now. We recommend minimising your investment now until DirectX 10 cards become more affordable. The cards here will do just fine on their own for the time being.

PC USER'S RECOMMENDED PC SPECIFICATIONS

	Basic system	Consider these alternatives/upgrades
CPU	Intel Core 2 Duo E6750	Intel Core 2 Duo E6850 for those who want more grunt (particularly for video editing or gaming).
		AMD Athlon 64 X2 6400+ (for diehard AMD fans).
Motherboard	Motherboard with Intel G35 chipset	For Intel systems, a motherboard with an Intel P35 chipset or Nvidia nForce 680i chipset.
		For an AMD-based motherboard, opt for an Nvidia nForce 680a SLI chipset (for gamers who want affordable SLI).
		Motherboard with at least six SATA II ports, plus RAID 0, 1 and 5 options, for those with serious storage needs.
RAM	1GB DDR2-667	2GB for serious image editing on Vista.
		Consider 800MHz DDR2 or 1,066MHz for high-performance systems.
Graphics	No graphics card required for non-gamers with G35 motherboard	AMD Radeon HD 2600 XT (GDDR3) for gamers who go for Intel/CrossFire board.
		Nvidia GeForce 8800 GT 512MB for gamers with an Nvidia/SLI board.
Hard drive	250GB SATA drive (such as Samsung SpinPoint SP2504C)	2 x 250GB SATA drives in RAID 0 setup for gaming or serious media libraries.
		2 x 500GB SATA drives (such as Samsung's HD501LJ) in RAID 0 setup if you want even more disk space, or in RAID 1 if you want data redundancy.
		3 x 500GB SATA drives in RAID 5 setup if you want lots of disk space and data redundancy (for example, for a media server).
Optical drive	DVD burner (such as Pioneer DVR-212)	Second DVD drive might be helpful for serial burners.
Extras		Digital TV tuner card (such as Compro VideoMate E700) for media centre PCs.
Monitor	19in LCD (such as BenQ FP202W)	Dell 2007WFP 20in LCD for serious gaming, media centres and design work.
Estimated cost: $900		

TECH TERMS: Chipset. A pair of chips on the motherboard (the main circuit board inside the PC) that control many key functions, including which processors can be installed. **SLI or CrossFire.** Support for two graphics cards to run together for improved 3D games performance. SLI is for Nvidia-based cards; CrossFire is for AMD cards. **RAID.** Refers to a number of ways of using two or more hard disks together. RAID 0 pools disk space to improve performance. RAID 1 mirrors two disks to safeguard data. RAID 5 is less wasteful than RAID 1, losing only a third of total disk space for data redundancy.

TOP 100 PRODUCTS: PCs_PC SPEAKERS_LCD MONITORS_TV TUNERS_108 • MICE, KEYBOARDS & GAME CONTROLLERS_STORAGE DEVICES_MP3 PLAYERS_109 • PRINTERS_TELEVISIONS_ SECURITY SOFTWARE_NETWORKING_110 • DIGITAL CAMERAS_DIGITAL VIDEO CAMERAS_ PC COMPONENTS_HOME THEATRE_111 • GAMES_112

JBL Creature

$200–$265 / CONEXUS (02) 9975 2799
www.jbl.com

This cool-looking set of speakers features a 27W floor-facing subwoofer and two 9W satellites. The satellites are small, but produce a really crisp and powerful sound, with a good balance of highs and lows. It is available in black, white or blue for $200, or a 'liquid metal' finish for $265.

rating 95%

BenQ FP202W

$279 / BENQ / (02) 8895 8800
www.benq.com.au

This monitor impressed us with its 20in screen size and 1,680 x 1,050-pixel resolution. Viewing angles and contrast weren't the best we've seen, but were reasonable considering the low price. We wouldn't use it as a TV, but as a monitor, it's a great buy.

rating 80%

PCs

Product	Review issue	Key specs	PC User says	Value rating
PC eXpress Invader 560B $2,499 *www.pc-express.com.au*	February 2008	Intel Core 2 Duo E6850, 4 x 500GB HDD, 2GB RAM	"Plenty of CPU speed, graphics speed and truckloads of storage."	95%
Excel Computers Excel GM-880 $1,499 *www.excelcomputers.com.au*	February 2008	AMD Athlon 64 X2 6000+, 2 x 500GB HDD, 2GB RAM	"This one may have less speed than the Invader 508B, but the overall value is damn good."	90%
PC eXpress Invader 508B $1,499 *www.pc-express.com.au*	February 2008	Intel Core 2 Duo E6750, 320GB HDD, 2GB RAM	"This was the fasted gaming PC in the group we tested."	90%
Excel Computers Excel AL-6000 $1,499 *www.excelcomputers.com.au*	January 2008	AMD Athlon 64 X2 6000+, 2 x 500GB HDD, 2GB RAM, 19in widescreen LCD monitor	"This one has it all — gaming, storage, digital TV and decent all-round performance."	90%
Excel Computers Excel HT-660 $2,299 *www.excelcomputers.com.au*	January 2008	Intel Core 2 Quad Q6600, 4 x 500GB and 1 x 80GB HDD, 2GB RAM	"Quad-core processor and 2TB of storage for $2,300 is very, very hard to beat."	90%
Pacstar E2160 Intel System $999 *www.pacstarcomputer.com.au*	January 2008	Intel Pentium Dual-core E2160, 1GB RAM, 320GB HDD, 19in widescreen LCD monitor	"Can't buy faster than this brilliantly overclocked PC for the price."	90%
TI Computers TI Deluxe 1500 $1,499 *www.ticomputers.com.au*	December 2007	Intel Core 2 Duo E6850, 2GB RAM, 2 x 500GB HDD, 19in monitor	"Feel the power — not a lot of flashy extras, but all the grunt of a V8."	90%

PC SPEAKERS

Product	Review issue	Key specs	PC User says	Value rating
Creative I-Trigue 3400 $150 *www.au.creative.com*	February 2008	Desktop stereo speakers with 24W subwoofer and 8.5W satellites	"A good-sounding set for the price, plus all the features you'd want from stereo PC speakers."	95%
JBL Creature $200–$265 *www.jbl.com*	February 2008	Desktop stereo speakers with 27W subwoofer and 9W satellites	"There's no line-in, but otherwise this is an outstanding set of PC speakers for music lovers."	95%
Logitech G-51 $300 *www.logitech.com*	February 2008	Surround sound speakers with 56W subwoofer and 20W satellites	"The controls and features are the best of those reviewed here."	95%
Cyber Acoustics CA-3550 $100 *www.cyberacoustics.com*	February 2008	Desktop stereo speakers with 20W subwoofer and 6W satellites	"No auxiliary line-in, but great budget speakers for those who like plenty of bass."	90%
Altec Lansing VS 2421 $99 *www.alteclansing.com*	February 2008	Desktop stereo speakers with 14W subwoofer and 7W satellites	"Very good all-round sound for the price, with plenty of features."	90%

LCD MONITORS

Product	Review issue	Key specs	PC User says	Value rating
Dell 2407WFP-HC $999–$1,299 *www.dell.com.au*	January 2008	24in, 1,920 x 1,200, 1,000:1 contrast ratio	"At $999, this is about the best LCD monitor you can get."	85%
BenQ FP202W $279 *www.benq.com.au*	January 2008	20.1in, 1,680 x 1,050, 1,000:1 contrast ratio	"A high resolution for $279 makes this monitor an appealing solution."	80%
LG L226WTQ-BF $450 *www.lge.com.au*	January 2008	22in, 1,680 x 1,050, 3,000:1 contrast ratio	"Good image quality at a reasonable price."	80%
BenQ FP241W $1,099 *www.benq.com.au*	October 2007	24in, 1,920 x 1,200, 1,000:1 contrast ratio	"Offers everything the Dell has, plus HDMI and a decent price."	85%
BenQ FP222W $369 *www.benq.com.au*	October 2007	22in, 1,680 x 1,050, 700:1 contrast ratio	"Cheapest 22in LCD on the market and definitely one to consider."	80%
LG L196WTQ-BF $435 *www.lge.com.au*	October 2007	19in, 1,440 x 900, 3,000:1 contrast ratio	"Expensive, but with the image quality to match."	80%
Samsung SyncMester $1,899 *www.samsung.com.au*	October 2007	30in, 2,560 x 1,600, 1,000:1 contrast ratio	"Resolution to burn, but needs a DVI-Dual graphics card to run."	80%

TV TUNERS

Product	Review issue	Key specs	PC User says	Value rating
DVICO FusionHDTV Dual Digital 4 $280 *www.dvico.com*	January 2008	Dual HD TV tuners, internal	"A little more expensive than some models, but we loved it and its outstanding remote control."	90%
Pinnacle PCTV Dual DVB-T Diversity Stick 2000E $230 *www.pinnaclesys.com*	January 2008	Dual TV tuners, external USB device	"Good software and we liked the extra antenna for better reception on the road."	90%
Compro VideoMate E700 $199 *www.compro.com*	October 2007	Dual digital TV tuners, internal	"This tuner worked well, with great performance from the software."	90%

MICE, KEYBOARDS & GAME CONTROLLERS

Product	Review issue	Key specs	PC User says	Value rating
Belkin Nostromo SpeedPad n52 $49 *www.belkin.com/au*	January 2008	Specialised game controller for PC	"Remains one of the best specialised gaming controllers we've tested."	**100%**
Microsoft Xbox 360 Wireless Controller for Windows $79.95 *www.microsoft.com.au*	January 2008	A wireless Xbox 360 controller you can also use with your Windows PC	"With its flawless functionality and ergonomics, it's a must-have for PC and Xbox 360 owners."	**100%**
Logitech Cordless Desktop Wave $130 *www.logitech.com*	January 2008	Wireless keyboard and mouse combo	"Both the keyboard and mouse are comfortable, responsive and easy to use for extended periods."	**90%**
Logitech VX nano $90 *www.logitech.com*	January 2008	Notebook mouse	"The VX has a slight edge over Microsoft's notebook mouse."	**90%**
Logitech Wave Keyboard $65 *www.logitech.com*	January 2008	Ergonomic keyboard	"Takes some getting used to, but it's ergonomically sound."	**90%**
Logitech G25 Racing Wheel $399 *www.logitech.com*	January 2008	Racing wheel with three pedals	"If you're a racing sim aficionado and money is no object, the G25 is the cream of the crop."	**90%**
Microsoft Laser Mouse 8000 $105 *www.microsoft.com.au*	January 2008	Performance mouse	"Being able to charge via USB would have added more flexibility, but this is a very good mouse."	**90%**
Plantronics GameCom X30 $45 *www.plantronics.com.au*	November 2007	Gaming headset for the Xbox and Xbox 360	"If you want to chat over Xbox Live, the X30 is it."	**95%**
Logitech G5 Laser Mouse $90 *www.logitech.com*	November 2007	2,000dpi laser gaming mouse	"A great mix of ergonomics, speed and accuracy."	**90%**
Logitech Premium Stereo Headset $29 *www.logitech.com*	November 2007	Gaming headset for PC	"Combines comfort with the convenience of inline volume and mute controls."	**85%**
Razer DeathAdder Gaming Mouse $60 *www.razerzone.com*	November 2007	1,800dpi optical gaming mouse	"If you don't need high sensitivity, this is a great choice."	**85%**

STORAGE DEVICES

Product	Review issue	Key specs	PC User says	Value rating
Pioneer DVR-212BK $59 *www.pioneer.com.au*	January 2008	SATA internal DVD burner	"One of the few drives we tested to overclock DVD media well."	**95%**
ASUS BC-1205PT $350 *www.asus.com.au*	January 2008	Blu-ray/DVD/CD combo drive	"Cheaper than the Pioneer BDC-S02, and it matches it for performance and speed."	**90%**
Corsair Flash Voyager GT 8GB $110 *www.corsair.com*	January 2008	8GB USB flash drive	"A little more costly than similar models, but if you need the extra speed, it's certainly worth it."	**90%**
D-Link DNS-323 $299 *www.dlink.com.au*	January 2008	Network-attached storage device	"You won't find a cheaper, easier solution."	**90%**
Seagate FreeAgent Pro 750GB $365 *www.seagate.com*	January 2008	750GB external hard drive	"Performance was mostly great and it's packed with connections."	**90%**
Western Digital Passport 160GB $165 *www.wdc.com*	January 2008	160GB portable hard drive	"It offered solid performance, but what really makes it great is its small size and light weight."	**90%**
Pioneer BDC-S02BK $430 *www.pioneer.com.au*	November 2007	Combination Blu-ray reader and DVD/CD burner	"The cheapest way for PC owners to get into Blu-ray movies."	**85%**

MP3 PLAYERS

Product	Review issue	Key specs	PC User says	Value rating
Apple iPod Classic (80GB) $349 *www.apple.com.au*	January 2008	80GB hard drive-based MP3 player with video support	"For sheer value, the 80GB iPod Classic is hard to beat."	**90%**
Apple iPod Nano $279 *www.apple.com.au*	January 2008	8GB flash-based MP3 player with video support	"Not perfection, but still a classy reinvention of the Nano and with good battery life."	**90%**
Sony Walkman NWZ-S616F $199 *www.sony.com.au*	December 2007	8GB flash-based MP3 player with video support	"Over 31 hours battery life, video playback and good audio quality make this the one to beat."	**90%**
Apacer Audio Steno AU581 $85 *http://ap.apacer.com*	December 2007	2GB flash-based MP3 player	"Great value, decent battery life and good audio quality."	**85%**
iRiver X20 $249 *www.iriver.com.au*	December 2007	4GB flash-based MP3 player with video support	"A flash player with a removable Lithium Ion battery!"	**85%**

Belkin Nostromo SpeedPad n52

$49 / BELKIN / 1800 235 546
www.belkin.com.au

This little unit is one of the best specialised gaming controllers we've tested. It has 14 keypad buttons placed close together for easy access, two thumb buttons, an eight-way D-pad and a scroll wheel with a built-in button. It's very comfortable to use and connects to the PC via a USB cable.

rating 100%

Apple iPod Nano

$279 / APPLE / 13 36 22
www.apple.com.au

Although there are some great flash-based MP3 players on the market, none offer more than Apple's new iPod Nano. We liked the Nano because of its slim design, excellent interface and the 2in widescreen display, which makes it possible to actually watch video on this tiny little device.

rating 90%

Canon PIXMA MP510

$149 / CANON / 1800 021 167
www.canon.com.au

This printer was by far the best in its class as far as our tests were concerned. It easily outlasted every other printer in its category during our cartridge run-down test, producing 74 A4 photo prints at a very economic price. Its print quality was also excellent.

rating **90%**

Logitech Sqeezebox

$370 / LOGITECH / 1800 133 274
www.logitech.com.au

This slick and very well-designed music-streaming device plugs into your stereo and lets you play back the MP3s on your PC over a wired or wireless network connection. It has great format support and the interface is a dream to use.

rating **95%**

PRINTERS

Product	Review issue	Key specs	PC User says	Value rating
Canon PIXMA MP510 $149 *www.canon.com.au*	January 2008	A4-sized colour multifunction device	"As close as we've seen to the perfect all-in-one for under $150."	90%
Canon PIXMA MP600 $265 *www.canon.com.au*	January 2008	9,600 x 2,400dpi A4-sized colour multifunction device	"The best combination of features, quality and value we saw in the feature."	90%
Canon PIXMA MP810 $339 *www.canon.com.au*	August 2007	9,600 x 2,400dpi A4-sized colour printer	"A whisper-quiet printer that's better than the O7360, but more expensive."	85%
HP Photosmart O7360 $260 *www.hp.com.au*	August 2007	4,800 x 1,200dpi A4-sized colour printer	"Best-value A4 photo-quality printing in this class."	85%

TELEVISIONS

Product	Review issue	Key specs	PC User says	Value rating
LG 47LB20E $4,999 *www.lge.com.au*	January 2008	47in LCD TV, 5,000:1 contrast ratio	"Full HDTV with built-in 160GB PVR."	90%
Samsung PS50Q91HD $2,999 *www.samsung.com.au*	January 2008	50in plasma TV, 1,365 x 768 resolution	"This 50in plasma TV proved its worth in testing."	90%
Pioneer PDP-5000EX $10,999 *www.pioneer.com.au*	October 2007	50in LCD TV, 1,920 x 1,080 resolution	"Best panel on the market, but lacking some creature comforts."	85%
Hitachi 42P09600TA $2,195 *www.hitachi.com.au*	October 2007	42in plasma TV, 10,000:1 contrast ratio	"About as close to true HD as you'll get at this price."	80%
Panasonic TH-42PX7A $1,850 *www.panasonic.com.au*	October 2007	42in plasma TV, 10,000:1 contrast ratio	"Not true HD, but delivers a smooth image."	80%
Samsung LA46M81BD $4,499 *www.samsung.com.au*	October 2007	46in LCD TV, 15,000:1 contrast ratio	"A true HD panel with very good comparative image quality."	80%

SECURITY SOFTWARE

Product	Review issue	Key specs	PC User says	Value rating
Symantec Norton 360 $109.95 per year *www.symantec.com.au*	January 2008	Security suite	"The suite boasts excellent detection and removal, and it's fairly unobtrusive."	90%
Webroot Spy Sweeper with Antivirus 5.5 $39.95 *www.webroot.com*	January 2008	Antispyware application	"Protects against all kinds of threats, with outstanding detection rates."	90%
SpamBayes Free *http://spambayes.sourceforge.net*	January 2008	Antispam software	"Very configurable and it gets better over time."	85%
Check Point ZoneAlerm $89.95 then $49.95 per year *www.zonealarm.com*	September 2007	Security suite	"Includes an outstanding firewall and a powerful removal engine."	85%
McAfee Total Protection 2007 $129.95 per year *www.mcafee.com.au*	September 2007	Security suite	"Tons of features and great security, but the pop-ups were annoying."	85%
Trend Micro PC-cillin Internet Security Suite $99.95 then $79.95 per year *www.trendmicro.com.au*	September 2007	Security suite	"Easy to use and has lots of features, but can be a little unstable at times."	85%
Eset NOD32 $64.50 for one year *www.ned32.com.au*	September 2007	Antivirus application	"Excellent detection, but the interface isn't very friendly."	90%
ALWIL avast! 4.7 Home Edition Free *www.avast.com.au*	September 2007	Antivirus application	"Monitors just about every type of net activity and is easy to use."	85%

NETWORKING

Product	Review issue	Key specs	PC User says	Value rating
Logitech Sqeezebox $370 *www.logitech.com*	January 2008	Music streaming device that supports MP3, WMA, FLAC, WAV and Ogg Vorbis	"An incredibly smart, well-designed device. It doesn't disappoint."	95%
MediaGate MG-350HD $299 *www.airlinktek.com*	January 2008	Network media player	"This is still the best media player for the price."	90%
ZyXEL P-2602HWL-01A $210 *www.zyxel.com.au*	January 2008	Wireless ADSL2+ router	"Does almost everything right — if you need a full-featured router, this one's a corker."	90%

DIGITAL CAMERAS

Product	Review issue	Key specs	PC User says	Value rating
Fujifilm FinePix S6500FD $499 *www.fujifilm.com.au*	January 2008	6.1MP camera with 10.7X optical zoom	"Great value. It's not big on MP, but it does a lot of things well for the price."	**90%**
Nikon D40 $799 *www.nikon.com.au*	January 2008	Digital SLR, plus Nikkor 18-55mm zoom lens	"It's a compact model yet produces amazing images."	**90%**
Canon EOS 400D $1,499 *www.canon.com.au*	August 2007	10.1MP digital SLR, plus 18-55mm and 75-300mm zoom lens	"Beautiful image quality and auto-sensor cleaning make this a great camera."	**90%**
Nikon D40X $1,349 *www.nikon.com.au*	August 2007	10.2MP digital SLR, plus Nikkor 18-55mm zoom lens	"Delivers 10MP image resolution and excellent quality."	**85%**
Ricoh Caplio R6 $599 *www.ricoh.com.au*	August 2007	7.1MP camera with 7X optical zoom	"Not cheap, but a good-quality big-zoom lens in an ultra-compact body with good image quality."	**85%**

DIGITAL VIDEO CAMERAS

Product	Review issue	Key specs	PC User says	Value rating
Canon M0120 $349 *www.canon.com.au*	January 2008	Budget MiniDV camcorder	"It packs a 35X optical zoom lens and records in 16:9 widescreen."	**90%**
Canon HV20 $1,499 *www.canon.com.au*	January 2008	High-definition MiniDV/HDV camcorder	"Beautiful image quality — there is still a lot to be said for tape."	**90%**
Sony DCRDVD908 $1,199 *www.sony.com.au*	January 2008	DVD camcorder	"Good media support and decent image quality make this a good buy."	**90%**
JVC Everio GZ-HD7 $2,349 *www.jvc-australia.com*	November 2007	High-definition 60GB HDD camcorder	"JVC could up the hard drive, but otherwise, nice HD video from this one."	**85%**
Sony HDR-SR8 $2,229 *www.sony.com.au*	November 2007	High-definition 100GB HDD camcorder	"Nice features and price, but no progressive-scan mode."	**85%**

PC COMPONENTS

Product	Review issue	Key specs	PC User says	Value rating
ASUS P5K-E $240 *www.asus.com.au*	February 2008	Intel motherboard	"Includes integrated Wi-Fi, although the layout could be better."	**95%**
Gigabyte GA-P35-DS3P $180 *www.giga-byte.com.au*	February 2008	Intel motherboard	"If you're on a tight budget, this one packs heaps of features at a very decent price."	**95%**
OEM cooler Free with CPU	February 2008	Fan-based cooling device	"Clearly the best option for most users."	**95%**
Gigabyte G-Power 2 Pro $TBA *www.giga-byte.com.au*	February 2008	Fan-based cooling device	"Great performance from a reasonably-sized cooler."	**90%**
Gigabyte GA-P35-DS3L $135 *www.giga-byte.com.au*	February 2008	Intel motherboard	"Great performance, build quality and features at a bargain price."	**85%**
Inno3D GF 8800GT Overclock $399 *www.inno3d.com*	February 2008	Nvidia graphics card	"As fast a card as you'll see under $400."	**85%**

HOME THEATRE

Product	Review issue	Key specs	PC User says	Value rating
Shure SE53D $650 *www.shure.com*	February 2008	In-ear earphones	"One of the best sets of earphones we've ever tested, but expensive."	**90%**
BenQ MP612 $1,299 *www.benq.com.au*	January 2008	SVGA, DLP projector	"A great projector for the price, despite some minor flaws."	**90%**
Shure SE110 $170 *www.shure.com*	January 2008	In-ear earphones	"An outstanding set of earphones for portable music players."	**90%**
Sony MHCRG295 $275 *www.sony.com.au*	January 2008	Budget hi-fi system with three-CD changer and MP3 support	"Great value system with decent sound and features."	**90%**
Sony HTDDW1600 $1,050 *www.sony.com.au*	January 2008	Home theatre system	"Looks scary, but has decent performance at a good price."	**90%**
Hitachi PJTX200W $2,699 *www.hitachi.com.au*	January 2008	1,280 x 720 LCD home theatre projector	"Great image quality and reasonably priced lamps."	**85%**
Logitech AudioStation $310 *www.logitech.com.au*	January 2008	iPod speaker system with 4in subwoofer	"Great sound and features for the price."	**85%**

Sony DCRDVD908

$1,199 / SONY / 1300 137 669

www.sony.com.au

This Handycam can handle DVD+/-R/RW/+R double-layer discs. Video quality was decent and it can capture high-resolution still images. Audio can be recorded in 5.1-channel surround and it has a 2.7in widescreen viewfinder.

rating **90%**

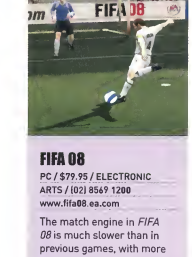
Shure SE110

$170 / JANDS / (02) 9582 0909

www.shure.com

Earphones are often overlooked, but they make a big difference to the quality of audio you receive from your music player. This set gives you clear, precise highs and punchy mids. They're not super-strong in terms of low-end response, but they still have plenty of kick.

rating **90%**



FIFA 08

PC / $79.95 / ELECTRONIC ARTS / (02) 8569 1200
www.fifa08.ea.com

The match engine in *FIFA 08* is much slower than in previous games, with more emphasis on tactics and build-up play than balls-to-the-wall arcade action. The animation is excellent, but not as good-looking as the Xbox 360 version.

rating **90%**

GAMES

Product	Review issue	Key specs	PC User says	Value rating
Call of Duty 4: Modern Warfare $99.95 *www.charliosierdelta.com*	February 2008	WWII game for PC	"A brilliant FPS reinvention that applies cutting-edge production values."	**90%**
FIFA 08 $79.95 *www.fifa08.ea.com*	February 2008	PC sports simulation	"Prevails to be a fantastic addition to this soccer series."	**90%**
BioShock $89.95 *www.bioshockgame.com*	January 2008	First-person shooter for PC	"A paragon of single-player, story-driven gaming."	**95%**
The Orange Box $99.95 *http://orange.half-life2.com*	January 2008	A collection of first-person shooters for PC	"Each game stands alone as an example of inspired design."	**95%**
Project Gotham Racing 4 $100 *www.bizarrecreations.com/games/pgr4*	January 2008	Racing game for Xbox 360	"A worthy continuation and advancement to the series."	**95%**
Company of Heroes: Opposing Fronts $59.95 *www.companyofheroesgame.com*	January 2008	WWII game for PC	"*Opposing Fronts* is the same, but brilliantly different."	**90%**
Crysis $99.95 *www.ea.com/crysis*	January 2008	First-person shooter for PC	"A massively polished and highly accessible shooter."	**90%**
Enemy Territory: Quake Wars $99.95 *www.enemyterritory.com*	January 2008	First-person shooter for PC	"A rewarding and exciting shooter with imaginative and varied play."	**90%**
Forza MotorSport 2 $99.95 *www.forzamotorsport.net*	January 2008	Racing game for Xbox	"While it's not massively different from the original, this is still the best racing game on Xbox 360."	**90%**
Guitar Hero III: Legends of Rock $170 *www.guitarhorogame.com*	January 2008	Rhythm game for Xbox 360, PS3, PS2 and Wii	"An excellent addition to the series, but we'd like some more hit songs."	**90%**
World in Conflict $90 *www.worldinconflict.com*	January 2008	Real-time strategy game	"The focus here is more on combat, which is all the better."	**90%**
Tom Clancy's Ghost Recon: Advanced Warfighter 2 $89.95 *www.ghostrecon.com*	January 2008	3D shooter for PC	"Not a massive leap forward, but it's a worthy addition to your collection."	**85%**

PC USER MARCH 2008 SUBSCRIPTION PROMOTION TERMS AND CONDITIONS

1. Information on how to enter and prize details form part of these Terms and Conditions. Participation in this promotion is deemed acceptance of these Terms and Conditions.
2. Entry is only open to residents of Australia who subscribe to or renew their subscription to *PC User* within the promotional period (for a minimum period of 12 months). In addition, all current and valid persons who have subscribed to the magazine as at the closing time for the promotion will be automatically included in the prize draw. Entry is automatic upon subscription and subject to the correct use of a valid credit card or, if payment is made by cheque, the cheque must be cleared for payment. Subscriptions are to be sent by mail to PC User, Reply Paid 3357, Sydney, NSW 2001, or made by telephone on freecall 13 61 16 or via the internet at **www.pcuser.magshop.com.au**. Employees (and their immediate families) of the Promoter and agencies associated with this promotion are ineligible to enter. This offer is not valid in conjunction with any other offer. Only one entry is permitted per person per subscription/renewal. If the subscription is a gift, only the gift recipient (ie. person receiving the subscription) will be entered into the prize draw.
3. The Promoter reserves the right, at any time, to verify the validity of entries and entrants (including an entrant's identity, age and place of residence) and to disqualify any entrant who submits an entry that is not in accordance with these Terms and Conditions or who tampers with the entry process (including but not limited to call costs). Failure by the Promoter to enforce any of its rights at any stage does not constitute a waiver of those rights.
4. By subscribing to this ACP Magazines Ltd magazine title the entrants acknowledges that 'tip-ons' and gifts that may be available with non-subscriber copies may not be provided with subscriber copies, depending on the sole discretion of ACP Magazines Ltd.
5. Incomplete, indecipherable, illegible or inaudible entries will be deemed invalid.
6. Promotional period commences 06/02/08 and closes 23:59 AEST 04/03/08. The draw will take place at 11:00 AEST at 54-58 Park Street, Sydney, NSW 2000 on 07/03/08. The winners will be notified by mail (using contact details provided in the subscription) and their names will be published in the 'Public Notices' section of *The Australian* on 14/03/08. The Promoter's decision is final and no correspondence will be entered into.
7. The first 18 valid entries drawn from all entries received will win a Linksys Network Attached Storage System (NAS200) valued at $250 each. Prize does not include any ancillary costs associated with redeeming this prize. These are the responsibility of the winner.
8. The total prize pool is valued at $4,500. Prizes are not transferable or exchangeable and cannot be taken as cash.
9. If the winner of the prize is under the age of 18 years, the prize will be awarded to the winner's nominated parent or guardian.
10. If the prize is unavailable, the Promoter, in its discretion, reserves the right to substitute the prize with a prize to the equal value and/or specification, subject to any written directions from a regulatory authority.
11. A draw for any unclaimed prizes may take place on 23/06/08 at the same time and place as the original draw, subject to any directions from a regulatory authority. Winners' names will be published in *The Australian* on 27/06/08.
12. If this promotion is interfered with in any way or is not capable of being conducted as reasonably anticipated due to any reason beyond the reasonable control of the Promoter, the Promoter reserves the right, in its sole discretion, to the fullest extent permitted by law to disqualify any entrant; or subject to any written directions from a regulatory authority, to modify, suspend, terminate or cancel the promotion, as appropriate.
13. Except for any liability that cannot be excluded by law, the Promoter (including its officers, employees and agents) excludes all liability (including negligence), for any personal injury; or any loss or damage (including loss of opportunity); whether direct, indirect, special or consequential, arising in any way out of the Promotion, including, but not limited to, where arising out of the following: any technical difficulties or equipment malfunction (whether or not under the Promoter's control); any theft, unauthorised access or third-party interference; any entry or prize claim that is late, lost, altered, damaged or misdirected (whether or not after their receipt by the Promoter) due to any reason beyond the reasonable control of the Promoter; any variation in prize value to that stated in these Terms and Conditions; any tax liability incurred by a winner or entrant; or use of the prize.
14. All entries become the property of the Promoter. The collection, use and disclosure of personal information provided in connection with this competition is governed by the Privacy Notice (see page 5).
15. The Promoter is ACP Magazines Ltd (ABN 18 053 273 546) of 54-58 Park Street, Sydney, NSW 1028.
16. Authorised under NSW Permit No. LTPS/08/00149, ACT PERMIT No. TP08/0075, SA PERMIT No. T08/101.

Antec®

The Power of You

80 PLUS®

www.80PLUS.org

More than 80% efficient at 20%, 50% & 100% load

"Environmentally friendly" might not be the first thing that comes to mind when you think about high quality PC components. At Antec, we believe strongly in protecting the environment, and that's why many of our new products meet 80 PLUS®, the highest independently certified standard in energy efficiency. Like the EarthWatts line of power supply units, which lower your electrical bill while delivering the same quality Antec performance. In addition, many of our cases are now powered by 80 PLUS certified PSUs. No matter what your needs are, Antec enables quieter, cooler, and greener computing. Find out more at **www.antec.com**.

ALTECH COMPUTERS

WWW.ALTECH.COM.AU

(02) 8831 9999 sales.nsw@altech.com.au
(03) 9586 5099 sales.mel@altech.com.au
(07) 3017 2000 sales.bne@altech.com.au
(08) 9242 8822 sales.wa@altech.com.au

NSW	Umart International P/L	02 9745 0877	www.umart.net	ARC Computers	02 9748 8322	www.arc.com.au
	AusPCMarket	02 9646 8000	www.auspcmarket.com.au	IT Estate	02 9630 9630	www.itestate.com.au
VIC	Scorpion Technology	1300 726 770	www.scorpiec.com.au	Centre Com		www.centrecom.com.au
SA	Leader Computer System	08 8112 6000	www.leadersystems.com.au	Getright International	08 8362 0622	www.getright.com.au
TAS	Taspro Computers	03 6424 1911	www.taspro.com.au	Office Equipment Warehouse	03 6272 6272	www.oewcomputer.com
WA	Austin Computer	08 9201 2788	www.austin.com.au	PLE Computers	08 9309 4771	www.ple.com.au
QLD	Umart Online	07 3369 3926	www.umart.com.au	Computer Alliance	07 3420 3200	www.computeralliance.com.au
	Game Dude	07 3387 1500	www.gamedude.com.au	PC Superstore	07 3299 3399	www.pcsuperstore.com.au
NT	PC Superstore	08 8945 1644	www.pcsuperstore.com.au			

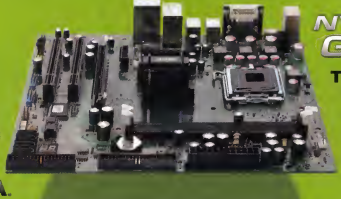
TOMORROW'S TECHNOLOGIES — TODAY

J&W®

NVIDIA GeForce

NVIDIA nForce

The foundation for a great system.



NVIDIA

NVIDIA GeForce 7150

The GeForce® Experience is now more affordable than ever!

With support for a full range of Intel CPUs, DDR2-800 memory, Integrated HDMI™, DVI or analog display output, NVIDIA® GeForce 7 Series motherboard GPUs deliver the premium graphics experience on Windows® Vista™ for entry level PCs.

- 45-nm Processors Support
- 1333 MHz Front Side Bu
- Dual Gigabit LAN / Dual BIOS
- On-board Debug LED
- Integrated 7 Series Graphics Engine

ALTECH COMPUTERS

WWW.ALTECH.COM.AU

SYD (02) 8831 9999 sales-syd@altech.com.au
MEL (03) 9558 5090 sales-mel@altech.com.au
BRIS (07) 3017 2000 sales-bris@altech.com.au
PER (08) 9242 8822 sales-wa@altech.com.au

- Now an Authorised Microsoft® OEM Distributor!

NSW	AusPCMarket	02 9646 8000	www.auspcmarket.com.au	Internet Technology Corp.	02 9211 8862	www.i-tech.com.au
WA	FOXCOMP Technology	08 93313643	www.foxcomp.com.au			
QLD	Global Solutions For Business P/L	07 3229 0197	www.globalgroup.net.au			

LEADTEK

Because every ***screenshot*** counts!

Uncompromising 3D realism and film quality effects from Leadtek. When a graphics card gets this good you better suit up, load up, take aim and FIRE!

Winfast PX8600GTS TDH

- GeForce 8800 GTS GPU
- 875MHz GPU Clock
- 256MB 128bit GDDR3
- RAMDAC 400MHz
- Dual Dual-Link DVI-I, HDTV Output
- World's first DirectX® 10 GPU

Exclusive to Altech customers!

Lost Planet game bundle FREE

The first playable game to showcase DirectX 10

ALTECH COMPUTERS

WWW.ALTECH.COM.AU

NSW	AusPCMarket	02 9646 8000	www.auspcmarket.com.au	ARC Computers	02 9748 8322	www.arc.com.au
	Jess World P/L	02 9630 9630	www.ilestate.com.au	Umart International P/L	02 9745 0877	www.umart.net
VIC	MegaPC	03 9793 9676	www.megapc.com.au	Scorpion Technology	1300 726 770	www.scorptec.com.au
QLD	Game Dude Pty Ltd	07 3387 1500	www.gamedude.com.au			
SA	Getright International	08 8362 0622	www.getright.com.au	Allneeds Computers	08 8211 8661	www.allneeds.com.au
TAS	Office Equipment Warehouse P/L	03 6272 6272	www.oewcomputer.com	Tas. Principal Computers	03 6234 5677	www.tasmanianpc.com.au

(02) 8831 9999 sales-syd@altech.com.au
(03) 9558 5090 sales-mel@altech.com.au
(07) 3017 2000 sales-bris@altech.com.au
(08) 9242 8822 sales-wa@altech.com.au

PLAY YOUR CARDS RIGHT

LIAN LI

Lian Li PC-A10 Classical Series Mid-Tower Case

PC-A10B – Black Aluminium
PC-A10 – Silver Aluminium

All of Lian-Li's best features come together in this magnificent value-for-money aluminium case

- Slidable M/B tray
- Twin PSU mounts
- 3 x 12cm fans plus 1 x patent side fan
- Soundproof lockable door
- Unique Cooling chamber for PSU(s) and HDDs
- 2 x pre-drilled holes for water cooling
- Top I/O ports
- 3-speed fan controller
- ATX and Pentium 4 M/B and standard ATX PSU compatibility
- 7 x 5.25" and 5 x anti-vibration 3.5" bays
- Measures 215 x 535 x 522mm (W x H x D)

PC-C32A – Silver Aluminium
PC-C32B – Black Aluminium

Lian Li PC-C32 Rack-Mountable Desktop Case

This is a one-of-a-kind case offering versatility and style in one package

- Removable handles; choose between desktop or rack-mount positioning
- 2 x 12cm fans, spare 8cm and 14cm fan mounts
- Removable PSU tray
- Anti-vibration runner rings and springs
- HDD and CD-Rom easy-assembly modules
- ATX M/B and standard ATX PSU compatibility
- 2 x 5.25" (5.25" to 3.5" converter x 1) and 4 x 3.5" drive bays
- Measures 426 x 167 x 530mm (W x H x D)

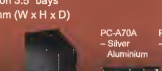
PC-A09B – Black aluminium

Lian Li PC-A09B Classical Series Mid-Tower Case

Classical styling with a modern flair at an affordable price

- Removable PSU tray
- 2 x 12cm fans (blue LEDs optional)
- Top I/O Ports
- HDD can be turned 180 degrees
- ATX M/B and standard ATX PSU compatibility
- 4 x 5.25" and 3 x 3.25" drive bays
- Measures 210 x 450 x 490mm (W x H x D)

PC-A70A – Silver Aluminium
PC-A70B – Black Aluminium



Lian Li PC-A70 Classical Series Full-Tower Case

Versatile full-tower case with classic Lian-Li styling

- Removable PSU tray, M/B tray, fan filters, 3.5" HDD tray and front panel
- Slidable PSU tray, 6 x 12cm fans
- Top I/O Ports
- HDD cages can be turned 180 degrees
- EXT and ATX M/B and standard ATX PSU compatibility
- 5 x 5.25" and 10 x 3.5" (removable) bays
- Measures 220 x 595 x 590mm (W x H x D)

Anyware™ COMPUTER ACCESSORIES

www.anyware.com.a
www.anywarenz.co.n

SYDNEY MELBOURNE PERTH ADELAIDE BRISBANE AUCKLAND

1300 ANYWARE (1300 269 927)

Anyware is a wholesaler and does not sell direct to public. The above products can be purchased from most independent computer dealers throughout Australia. Call the number above for your nearest reseller.

TAKE HOME ENTERTAINMENT TO THE NEXT LEVEL

The MediaGate series is a revolutionary way to view movies, photos and listen to music. The MG350HD, MG35 and MG25 are hard drive enclosures that have the capability to decode all your movie, picture and music files. Simply download your files onto the hard drive in the MediaGate (this can be done wirelessly using the MG350HD) and plug it into your TV to view your media files.

PC USER
2007 Best - Value Budget Network Media Player

ALT-MG350HD

PC USER 2006 Home Entertainment Product of the Year
Editors' rating 9.0/10 CNET.com.au, July 2006
NetGuide's RATING October 2006
PCAUTHORITY September 2006
Editor's Choice
POWER AWARD

- Watch High Definition movies on Standard Definition TVs
- Built-in hardware zoom (great with high definition movies)
- Supports HD MPEG-2, MPEG-4, WMV9, DAT, Xvid and OGG file formats
- Supports JPEG, BMP, GIF and PNG still picture
- Supports high resolution video output up to 1080p
- Supports MP1/2 MP@ML, MP4 ASP@L5, DivX 3.11, 4.x and 5.x, 6.x
- Supports Dolby digital, MP1 and MP2 Layers I, II and III (MP3), WMA
- Wirelessly stream media from other PCs
- Features NDAS networking technology (no more complicated network setups)
- Supports stereo L/R, optical/coaxial digital audio, analogue 5.1 channels
- Supports DVI, composite, S-video optical (audio) and component video outputs, 11g wireless connection and 10/100 ethernet port
- USB 2.0 host port; USB storage devices can be attached and the stored content can be played directly (ie external HDD)
- USB 2.0 slave port; provides an alternative way to download digital content from your PC directly
- 3.5" HDD is not included

Coming Soon! ALT-MG350HD with SATA & HDMI support

ALT-MG35

- DMA with a 10/100 Ethernet port
- Features NDAS networking technology (no more complicated network setups)
- Supports MP1/2 MP@ML, MP4 ASP@L5, DivX 3.11, 4.x and 5.x, 6.x, JPEG, MPEG, DAT, Xvid, OGG
- Supports Dolby digital, MP1 and MP2 Layers I, II and III (MP3), WMA
- Supports High Resolution Video Output up to 1080i
- Supports Digital 5.1 Channel Audio Output (DTS, AC3)
- Connects to PC via USB 2.0 for a fast data transfer or across a home network for file sharing from multiple PC's
- 3.5" HDD is not included

Coming Soon! ALT-MG35 with SATA support

POWER AWARD

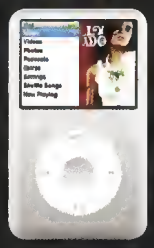
POWER AWARD
TOP BUY PC USER

ALT-MG25

- Supports USB 2.0 slave port
- Supports DivX, MPEG-4, DAT, Xvid, MP3, OGG, WMA and JPEG
- Supports MP1/2 MP@ML, MP4 ASP@L5, DivX 3.11, 4.x and 5.x, 6.x, JPEG
- Supports High Resolution Video Output up to 1080i
- Supports composite, S-video and component video outputs
- Supports Dolby digital, MP1 and MP2 Layers I, II and III (MP3), WMA
- Supports stereo L/R, optical/coaxial digital audio, analogue 5.1 channels
- 2.5" HDD is not included

Authorised Reseller

iPod Classic



iPod Nano

iPod Touch

iMac

Check out the website for our complete Apple product range

FIREFLY INTEL

INTEL PENTIUM E2180
512MB DDR2 MEMORY
160GB SATA HDD
18X DVD BURNER
ONBOARD VIDEO

GEFORCE 7300GS 256MB
ONLY $79!

320GB HDD
ONLY $24!

DOUBLE MEMORY
ONLY $10!

$565

SOHO INTEL

A4 MONO LASER
ONLY $99!

CREATIVE X-FI
ONLY $110!

500GB HDD
ONLY $50!

INTEL CORE 2 QUAD Q6600
2GB DDR2 MEMORY
RADEON HD3850 256MB
400GB SATAII HDD
18X DVD BURNER
22" WIDESCREEN LCD
TV TUNER / CARD READER

$1899

STANDARD INTEL

CORE 2 E6750
ONLY $75!

NVIDIA 8500GT
ONLY $45!

DOUBLE MEMO
ONLY $25!

INTEL CORE 2 DUO E4500
1GB DDR2 MEMORY
NVIDIA 7150 ONBOARD
250GB SATAII HDD
18X DVD BURNER
19" LCD MONITOR

$1035

HORNET GOLD

INTEL CORE 2 DUO E6750
2GB PC2-5300 DDR2
NVIDIA 8500GT 512MB
320GB SATAII HDD
18X DVD BURNER
22" WXGA LCD, 5MS
LOGITECH 2.0 SPEAKERS
COOLERMASTER CASE, 460W

$1299

XFX 8800GT 'XXX'
ONLY $329!

HORNET

SCORPTEC VENOM

INTEL CORE 2 DUO E8200
OCZ 2GB PC2-6400 DDR2
XFX 8800GT 512MB
2 X 320GB SATAII (RAID 0)
18X DVD BURNER
22" WXGA LCD
RAZER DEATHADDER
ZALMAN CNPS8000 COOLER
NZXT CASE, OCZ 600W PSU

$2385

WINDOWS VISTA
HOME PREMIUM

VENOM

HORNET PLATINUM

INTEL CORE 2 DUO E8400
ASUS NFORCE 780i SLI
PATRIOT 2GB PC8500 DDR2
2 x XFX 8800GT (SLI)
2 X 400GB SATAII (RAID 0)
18X DVD BURNER
22" WXGA LCD
RAZER DEATHADDER
NZXT CASE, OCZ 850W PSU

$3299

WINDOWS VISTA
HOME PREMIUM

HORNET

SCORPTEC STINGER

INTEL CORE 2 DUO E8500
GIGABYTE X38 CHIPSET
OCZ 2GB PC2-8500 DDR2
XFX 8800 ULTRA 768MB
2 X 400GB SATAII (RAID
18X DVD BURNER
24" WXGA LCD
CREATIVE X-FI GAMER
NZXT CASE, OCZ 1010W P

$4175

WINDOWS VISTA
ULTIMATE

STINGER

AUSTRALIA WIDE DELIVERY, INCLUDING COD!

VISIT US AT WWW.SCORPTEC.COM.AU FOR MORE SPECIALS!

All Prices are based on Cash only and include GST
2% Visa/MasterCard/Bankcard, 4% Amex/Diners Surcharge applies
Direct Deposit Banking Details: BSB: 033-385 ACC: 212477

CORPORATE / GOVERNMENT SALES

Scorptec Technology offers Corporate, Government and Educational customers...
You will be amazed at our competitive prices. Whether you are after a desktop PC, Server or Notebook, you will find an affordable price at Scorptec. If you would like an exclusive service and price tailored to your business, ask to

WWW.SCORPTEC.COM.AU

NOTEBOOK CLEARANCE SALE

HURRY WHILE STOCKS LAST!

ASUS
S6FM-1P040E

$2450
INTEL C2 DUO L7200, 1.5GB, 120GB
11.1" WXGA, READER, BT, VISTA
*STYLISH LEATHER!

ASUS
VX1-5E019C

$2545
INTEL C2 DUO T7200, 2GB, 160GB
15.4" SXGA, GF 7400, ,BT, VISTA
*FREE $75 BAG & MOUSE!

ASUS
G2S-7R067G

$2699
INTEL C2 DUO T7500, 2GB, 300GB
17.1" WSXGA+, NVIDIA 8600, 802.11N
*FREE $75 BAG & MOUSE!

ASUS
W6FP-3P051E

$1749
INTEL C2 DUO T5600, 1GB, 120GB
13.3" WXGA, DVDRW, BT, VISTA
*STYLISH LEATHER!

BACK TO SCHOOL SALE ON NOW!

hp
NX7300 RR585AV

$1199
TEL C2 DUO T5500, 512MB, 120GB
15.4" WXGA, WIFI, BT, GB LAN
*VISTA BUSINESS

FUJITSU
LIFEBOOK P7230

$2449
*MADE IN JAPAN
INTEL CORE SOLO U1400, 1GB, 80GB
10.6" WXGA, DVDSM, WIFI, BT, VISTA
*FREE $75 BAG & MOUSE!

FUJITSU
LIFEBOOK E8210

$1999
*MADE IN JAPAN
INTEL C2 DUO T5600, 1GB, 100GB
15.4" WXGA, X1400 256, BT, VISTA
*FREE $75 BAG & MOUSE!

FUJITSU
LIFEBOOK S6410P

$2575
*MADE IN JAPAN
INTEL C2 DUO T7500, 2GB, 160GB
13.3" WXGA, WEBCAM, BT, VISTA
*FREE PORT REPLICATOR!

acer
TM 7720G-602G32Mn

$2099
EL C2 DUO T7500, 2GB, 2 X 160GB
WXGA, HD2600XT, BT, WEBCAM
FREE 17" CARRY BAG!

acer
EX5220-050508Mi

$805
INTEL CELERON M 530, 512MB, 80GB
15.4" WXGA, WEBCAM, VISTA
*FREE $50 CARRY BAG!

acer
EX5620Z-2A1G12Mi

$999
INTEL DUAL CORE T2330, 1GB, 120GB
15.4" WXGA, DVDRW, WIFI, VISTA
*FREE $50 CARRY BAG!

lenovo
R61 7742L1M

$2175
INTEL C2 DUO, 2GB, 160GB
14" WXGA+, X3100 VIDEO, BT, VISTA
*BLU-RAY PLAYER

lenovo
T60 6371A13

$1749
TEL C2 DUO T7200, 2GB, 120GB
15.4" WXGA, FPR, WIFI, VISTA
EE 19" LCD ($400 Value!)

lenovo
R61 7732I5M

$1425
INTEL C2 DUO T7100, 1GB, 80GB
14.1" WXGA, 802.11N, BT, VISTA
*FREE 4GB USB/BAG/MOUSE!

lenovo
T61 7664I5M

$2599
INTEL C2 DUO T7300, 1GB, 120GB
14" WXGA, NVIDIA 128MB, BT, VISTA
*FREE $50 CARRY BAG!

lenovo
N100 0768GXM

$1679
INTEL C2 DUO T5600, 1GB, 120GB
15.4" WXGA, BT, WEBCAM, VISTA
*19" LCD ONLY $99!

SCORPION TECHNOLOGY COMPUTERS
{Est. 1998}

Unit 4-5/2, Garden Road
Clayton, VIC 3168
Ph: 1300 726 770
Fax: 1300 726 771

sales@scorptec.com.au
Mon-Fri: 10am - 6pm
Saturday: 10am - 3pm
Sunday: Closed

www.scorptec.com.au
scorpion TECHNOLOGY

CORPSOFT .COM.AU — New Product Lines for 2008

BenQ Monitors & Video Projectors

LACIE External Drives

Canon Printers, Scanners, Cameras and more

Microsoft Office 2007

	Upgrade	New Install
Standard	$315	$445
Pro 1-User	$379	$500
Pro 3-User (per user)	$360	$475
Home & Student (3-user)		$169
Professional Acad/Home		$247

Up to $300 Cashback

*Prices after cashback

Norton 360 — $50 Cashback

Norton 2008

	Norton 360	Internet Security
3-User Pack	$57	$39
5-User Pack	$113	$99
10-User Pack	$240	$169

*Prices after cashback

Phone Toll Free 1300 SOFTWARE • 1300 763 892

POPULAR PRODUCTS

Windows XP + BONUS 160Gb HD

	Upgrade	New Install*
Home	$219	$295
Professional	$369	$385

*Designed for System Builders

ACT! 2008 V10 - New Install	$199
Apple iPod – Full Range	$Call
AutoCAD 2008 +Bonus 22"LCD Monitor	$6645
Corel/Ulead DVD MovieFactory 6 Plus	$160
Corel/Ulead VideoStudio 11 Plus	$155
SPECIAL PRICE – while stocks last !!!	
Corel WordPerfect Office X3 Home Ed	$159
Diskeeper 2007 Server	$350
Diskeeper 2008 Professional Premier	$155
Diskeeper 2008 Server	$499
Dragon Naturally Speaking Mobile v9	$489
Dragon Naturally Speaking Professional v9	$1430
Dragon Naturally Speaking Preferred v9	$289
Filemaker Bento	$77
Filemaker Bento Family Pack	$127
Filemaker Pro v9 Upgrade	$289
Logitech – Full Range	$Call
MS Flight Simulator X Deluxe Edition	$80
MS Project 2007 Std 1-User	$899

PRODUCTS OF THE MONTH

Microsoft Office XP
Pro includes: Word, Excel, Outlook, Access and Powerpoint

$220 Standard Upgrade
$330 Pro Upgrade
$285 Pro Academic

While stocks last !!!

Up to $400 Cashback

QuickBooks CASHBACKS

QuickBooks EasyStart — $25 Cashback — $85
QuickBooks Accounting — $75 Cashback — $190
QuickBooks Plus — $150 Cashback — $370
QuickBooks Pro — $200 Cashback — $545
QuickBooks Premier — $400 Cashback — $865

*Prices after cashback

POPULAR PRODUCTS

Adobe Photoshop Elements 6
Classroom in a Book
$77

Also available: Photoshop CS3 - Illustrator CS3 InDesign CS3 - Dreamweaver CS3 - Flash CS3

MS Project 2007 Std 3-User *per User*	$839
MS Visual Studio Pro 2008 Acad/Home Use	$175
MS Office 2000 Pro New Install!	$380
MS Office 2003 Pro 5-User *per User*	$817
MS Office 2003 Std 5-User *per User*	$631
MS Works *NEW* Version 9	$75
Norton Ghost v12	$90
OmniPage 16	$149
PC Tools Privacy Guardian	$39
PC Tools Spyware Doctor	$44
PC Tools Registry Mechanic	$44
Pinnacle Studio v11 Standard	$99
Pinnacle Studio v11 Plus	$180
Roxio CRUNCH!	$66
Roxio Easy Media Creator Suite v10	$139
Symantec Partition Magic V8	$89
Trend Micro Internet Security 2008 3-User	$79
ZoneAlarm 2007 3-User *(Vista ready)*	$74

Visit www.corpsoft.com.au for more specials

Samsung Colour Laser Printers
From $290

Corsair Flash Voyager USB 2.0 Drive

4GB $67
8GB $125
16GB $260

Seagate Barracuda HARD DRIVES
7200rpm, Internal, 80GB to 750GB
From $77

CORPSOFT .COM.AU
Unit 1, 28 Victoria St, Smithfield NSW 2164 • PO Box 6168, Wetherill Park NSW 216
Phone (02) 9725 3700 • Fax (02) 9604 1983
CorpSoft.com.au is a division of Corporate Software Australia Pty Limited. ABN 65 003 338 07

Please visit www.corpsoft.com.au to check latest pricing on products

CORPSOFT .COM.AU

Online: www.corpsoft.com.au
TollFree: 1300 763 892
Phone: (02) 9725 3700
Fax: (02) 9604 1983

FRIENDLY SERVICE | ORDER ONLINE | PAY ONLINE | ORDER BY PHONE | IN-STORE PICK UP | OVERNIGHT DELIVERY | HUGE RANGE

Autodesk AutoCAD LT 2008

New Install – $1795

Adobe Illustrator CS3

$825 New Install†

Adobe InDesign CS3

$950 New Install†

Adobe Photoshop CS3

$900 New Install†

Adobe Photoshop CS3 Extended

$1199 New Install†

Your choice of a FREE

- iPod 4GB Nano or
- Seagate Freeagent Desktop 500GB Hard Drive

with purchase of any of these five products - while stocks last !!

POPULAR PRODUCTS

Adobe Acrobat V8*

HUGE SAVINGS

	Standard	Professional
1-User	$360	$550
3-User (per user)	$345	$530
5-User (per user)	$330	$510
Academic	$135	$215

*Special introductory price only while stocks last !!!

Adobe Elements

Plus FREE Training CD

	New Install	Academic
Adobe Photoshop Elements Version 6	$129	$89
Adobe Premiere Elements Version 4	$119	$89
Adobe Photoshop Elements Version 6 AND Premiere Elements Version 4 BUNDLE	$199	$139

Adobe Creative Suite CS3

	1-User	3-User (Per User)
Design Standard	$1525	$1425
Design Premium	$2380	$2280
Web Standard	$1350	$1250
Web Premium	$2150	$2050

Windows Vista

+ BONUS 250GB HD

	Upgrade	New Install*
Home Premium	$249	$349
Business	$340	$425
Ultimate	$460	$525
Ultimate Upgrade (from Home Premium)	$230	

*Designed for System Builders

NEW RELEASES

USB HDD Enclosure

NEW LINE

New Release

SATA and ATA 133 Hot Plug and Play Transfer rate of up to 12Mb/sec (USB 1.1) and 480Mbs (USB 2.0)

$55

Corel Paint Shop Pro Photo X2

New Release

$129 New Install

$97 Upgrade

CorelDRAW GraphicSuite X3

+ FREE Canon Powershot Digital Camera

$519 New Install

Microsoft Visual Studio 2008 Pro

New Release

$1220 New Install $840 Upgrade

Nero 8 Ultimate

NEW!

- Organise/manage all your multi-media files
- Create/edit new digital content

$149 New Install

Trend Micro PC Cillin Internet Security Pro 2008

New Release

+ BONUS MP4 PLAYER by Redemption

$110 3-User Pack

†Upgrade bundled with qualifying product. **PLEASE NOTE:** • Delivery: Post $11.50 or Courier $16.50 • We accept Mastercard and VISA. COD welcome. We accept AMEX with surcharge. • Goods ordered in error incur a 15% restocking fee • We Accept authorised returns for Credit within 10 days if goods are unopened and in saleable condition • Moneyback Offers (if any) are the responsibility of the manufacturer • Prices advertised are GST inclusive and correct at the time of artwork preparation, Jan 18th 2008 • Images shown are for illustration purposes only • Errors and omissions are excepted • Prices are subject to change without notice. PCU 0805

• Lowest Prices in Australia – GUARANTEED !!!

IF YOU RECEIVE A GENUINE LOWER PRICE – CALL US AND WE'LL BEAT IT.

TEG computers

Proud distributors of TONNY products

Spend $100 or more with TEG and we'll deliver FREE!

FOR MORE INFORMATION VISIT OUR WEBSITE AT www.tegcom.com.au

NEW

▶ Our TONNY Mice use woven nylon cords for extra durability and flexibility.

Keyboards
TK-102 PS/2 $13.00
TK-103 USB $15.00

TONNY Mouse Range

USB Optical Mouse

HM-2026 $10.00

HM-2029 $10.00

HM-2086Y/R/G $10.50

PS/2 or USB Optical Mouse

HM-2031 $10.00

HM-2002 $12.00

Wireless Optical Mouse

HM-5001 $19.00

HM-5006R $19.00

HM-2014 $10.00

Red
HM-2008R $12.00

Yellow
HM-2008Y $12.00

HM-2004 $12.00

HM-2001 $10.50

HM-5006L $19.00

HM-5006B $19.00

Novel Clip Lamp

JL-801 $3.30

USB Net Phone with Screen Display

PD-250 $38.00

USB Net Phones

Desktop
PD-222 $38.00

PD-227 $19.00

Multi-Function USB Car Charger

PD-100 $10.00

IPOD Car Charger

PD-160 $10.00

Negative-ion Generator

PD-080 $15.00

USB Speakers

Yellow or Black
SP-006
$18.00ea

PC Camera

(1.3Megapixels)
ANC-01A/B $39.00

USB Portable Floppy Drive

$29.00

USB 2.0 + 1394 Combo 3.5" HDD Case

$38.00

SATA External HDD Case

2.5" $23.00
3.5" $38.00

24 in 1 Internal 3.5" Card Reader

- Easy front panel access
- USB 2.0 multicard reader with one front panel USB 2.0 from MB
- Black or Beige available

$13.50

Internal 5.25" Card Reader

- Easy front panel access
- USB 2.0 multicard reader with 6.1CH audio port from MB
- 2 x USB 2.0 port from MB
- 1 x 1394 port from MB
- Available in silver

$23.00

Torch with 14 LED Lights

4054 $6.90ea

PCI USB 2.0 Card

4-Port $15.00

PCI Firewire Card

4-Port $18.00

SATA PCI Card

2-Port $23.00

PCMCIA 10/100 Lan Card

$20.00

PCMCIA Card

Firewire $32.00
USB 2.0 $32.00

Notebook Cooler Pad

Twin fan
$20.00

Tri fan
$29.00

Notebook Combination Lock

$10.00

USB Sound Card

$10.00

USB to RJ45 Network Adapter

$16.00

USB 2.0 External HDD Case

2.5" $15.00
3.5" $25.00
5.25"$48.00

24 in 1 USB 2.0 Card Reader

$15.00ea

USB Fan, USB Light

$15.00ea

Ballpointpen, Pencil, STYLUS pen in Gift Box

206 $2.30

USB to USB Data Transfer Cable

USB 1.1 CUB2UB1 $18.00
USB 2.0 CUB2UB2 $32.00

Slimline Clam CD Cases

10PK
$2.50

CD Sleeves

Saves storage space

100PK
$3.50

CD Case

40PCS
$3.90
80PCS
$4.90
128PCS
$8.90

Neck Headphone with Built in Microphone

GB-720WV $9.00

USB Bluetooth Adaptor

100m $29.00

4-Port USB Hub

USB 1.1 $8.50
USB 2.0 with power supply $18.00

USB to PS/2 Splitter Cable

$10.00

All orders are subject to our terms and conditions of sale. Pricing and stock availability is subject to change at any time without notice. Please note that pictures and illustrations are for display only and that the final product may vary. All products, brand names, trademarks are owned by their respective companies

TEG Computers
Shop 502, Lvl 5, 33 Bligh St
Sydney NSW 2000
Tel: 02 9223 2360
Fax: 02 9223 5775
sales@tegcom.com.au

Adscroll Australia
Unit 18, 1 Short Street
Chatswood NSW 2067
Tel: 02 9882 1666
Fax: 02 9882 2877
sales@adscroll.com.au

TEG Trading Hours
Monday to Friday
10:00am to 6:00pm
Adscroll Trading Hours
Monday to Friday
9:30am to 5:30pm

Adscroll Australia is moving to a bigger warehouse in Chatswood. Looking forward to seeing you there!

BUY NOW! For more info call 02 9223 2360 or FAX orders to 02 9223 5775

All orders will be sent by Express Post!

For wholesale inquiries contact Abscroll Australis
02 9882 1666

SALES: 02 9223 2360

sales@tegcom.com.au ALL PRICES INCLUDE GST

Smudge tested under water for 36 hours

Create superior photo prints with your inkjet printer

- Glossy finish for true photo quality
- Compatible with all inkjet printers
- Bright white for high colour saturation
- Ideal for use with TONNY inks

*Of equal value or less

Premium Photo Quality Paper
- 110gsm
- 100 sheets

A4 (210x297mm)...$11.50 TPP3811

Glossy Photo Paper
- 187gsm
- 20 sheets

A6 (105 x 148mm)...$ 4.90 TPP1846
A4 (210 x 297mm)...$12.90 TPP1811

Premium Glossy Paper
- 256gsm
- 20 sheets

A6 (105 x 148mm)...$ 6.90 TPP2846
A4 (210 x 297mm)...$16.90 TPP2811

Canon Ink Cartridges

TOP BUY PC User 2005

Rated 9 out of 10 by PC User

Model	TONNY
BCI-248K	$5.60
BCI-24C	$7.20

Model	TONNY
BX-3	$28.00
BC-02	$28.00
BC-03	$28.00
BC-05	$30.00
BC-20	$28.00
8CI-3eBK	$8.80

Model	TONNY
BCI-3eC/M/Y	$6.40
BCI-6BK	$6.40
BCI-6C/M/Y	$6.40
BCI-6G	$6.40
BCI-6R	$6.40
BCI-6PC/PM	$6.40

Model	TONNY
BCI-158K	$6.40
BCI-15C	$7.20
BCI-16C	$7.20
BCI-218K	$4.90
BCI-21C	$6.40

NEW! Canon Models

Model	Genuine	TONNY
PGI-5BK	$22.50	$8.50
CLI-8BK	$22.50	$8.50
CLI-8C/M/Y	$22.50	$8.50
CLI-8PC	$22.50	$8.50
CLI-8PM	$22.50	$8.50

Samsung Ink Cartridges

Model	TONNY
M40	$23.00

Epson Ink Cartridges

Model	TONNY
T001	$18.90
T003	$ 9.90
T005	$18.00
T007	$ 9.30
T008	$13.00
T009	$15.00
T013	$ 4.50
T014	$ 7.90
T017	$ 9.70
T018	$10.60
T026	$ 9.70
T027	$12.40
T028	$ 9.70
T029	$10.60
T038	$ 9.60

Model	TONNY
T039	$10.60
T0321	$10.80
T0322	$ 7.50
T0323	$ 7.50
T0324	$ 7.50
T0422C/M/Y	$ 9.50
T0461	$ 8.90
T0472/3/4	$ 8.90
T0491/2/3	$ 8.90
T0494/5/6	$ 8.90
T0640/1/2	$ 8.90
T0641/2/3/4	$ 8.90
T0647/8/9	$ 8.90
T0661/2/3/4	$ 8.90
T0681/2/3	$ 8.90

Model	TONNY
T5594/5/6	$8.90
T0621	$8.90
T0631/2/3/4	$7.50
T0731/2/3/4	$9.50
T0811/2/3	$9.50
T0814/5/6	$9.50
S020089	$9.90
S020093	$5.10
S020097	$9.00
S020108	$6.50
S020110	$9.50
S020187	$5.10
S020189	$6.50
S020191	$9.00
S020193	$9.90

HP Ink Cartridges

Model	TONNY
51625A (#25)	$28.00
51626A (#26)	$28.00
51629A (#29)	$28.00
51633MA (#33)	$32.00
51645A (#45)	$16.00
51649A (#49)	$28.00
C1823D (#23)	$30.00
C4841/2/3/4AA (#10)	$14.00
C4836/7/8A (#11)	$14.00
C5010DA (#14)	$26.00
C5011DA (#14)	$24.00
C6578D (#78)	$30.00
C6614A (#20)	$24.00
C6615DA (#15)	$24.00

Model	TONNY
C6625A (#17)	$30.00
C6656AA (#56)	$18.00
C6657AA (#57)	$32.00
C6658AA (#58)	$26.00
C8727A (#27)	$24.00
C8728AA (#28)	$26.00
C8765WA (#94)	$27.00
C8767WA (#96)	$29.00
C9363WA (#97)	$32.00
C8721WA (#02)	$11.00
C8771/2/3WA (#02)	$10.00
C8774/5WA (#02)	$10.00
C9351AA (#21)	$21.00
C9352AA (#22)	$23.00

Brother Ink Cartridges

Model	TONNY
LC-21BK	$7.90
LC-21C/M/Y	$7.50
LC-02BK	$7.90
LC-02C/M/Y	$7.50
LC-04BK	$7.90
LC-04C/M/Y	$7.50
LC-47BK	$7.90
LC-47C/M/Y	$7.50
LC-57BK	$6.90
LC-57C/M/Y	$6.50
LC-800BK	$7.90
LC-800C/M/Y	$7.50

Lexmark Ink Cartridges

Model	TONNY
12A1970	$32.00
12A1980	$35.00
17G0050	$32.00
17G0060	$35.00
13400HC	$36.00
13613HC	$36.00

Model	TONNY
10N0016 (#16)	$36.00
10N0026 (#26)	$39.00
15M0120 (#20)	$41.00
18C0031 (#31)	$35.00
18C0034 (#34)	$35.00
18C0035 (#36)	$37.00

Model	TONNY
18L0032 (#32)	$39.00
18L0042 (#B3)	$41.00

Brother Toner Cartridges

Model	TONNY
TN-100	$23.00
TN-200	$23.00
TN-2025	$59.00
TN-300	$23.00

Model	TONNY
TN-3060	$65.00
TN-8000	$23.00
TN-6600	$65.00
TN-7600	$65.00

Epson Toner Cartridges

Model	TONNY
EPL-5700	$49.00
EPL-5900	$49.00
EPL-6200	$49.00

Lexmark Toner Cartridges

Model	TONNY
Optra E210	$59.00
Optra E310	$69.00
Optra E/E+	$59.00
X215	$59.00

HP Black Toner Cartridges

Model	TONNY
92298A	$ 85.00
C3906A/F	$ 49.00
C3903A	$ 59.00
C3909A	$ 95.00
C4092A	$ 49.00
C4096A	$ 65.00
C4127A	$ 65.00
C4127X	$ 80.00
C4129X	$ 95.00
C4182X	$135.00
C7115A	$ 49.00
C7115X	$ 65.00

Model	TONNY
C8061X	$ 85.00
Q1338A	$ 95.00
Q2612A	$ 59.00
Q2613A	$ 59.00
Q2613X	$ 69.00
Q2610A	$ 75.00
Q2624A	$ 59.00
Q5942A	$ 95.00
Q5942X	$125.00
Q5949A	$ 59.00
Q5949X	$ 75.00
Q6511A	$105.00

TONNY Colour Toner Cartridges

Printer Model	Model	TONNY
HP LJ1500/2500, Canan L8P2410	C9700A (BK)	$65.00
	C9701/2/3A (CYM)	$79.00
HP LJ4600	C9720A (BK)	$155.00
	C9721/2/3A (CYM)	$185.00
HP LJ4500, Canan L8P2460/2040	C4191A (BK)	$59.00
	C4192/3/4A (CMY)	$69.00
HP LJ8000	C4149A (BK)	$89.00
	C4150/1/2A (CMY)	$155.00
Epson C900/1900	S050100 (BK)	$79.00
	S050097/98/99 (CMY)	$119.00
Epson C1000/C2000	S050033 (BK)	$90.00
	S050034/5/6(CMY)	$119.00

Samsung Toner

Model	TONNY
ML-1210D3	$ 59.00
ML 1650D6	$150.00
ML-1710D3	$ 59.00
ML-2010	$ 59.00
ML-2150D8	$140.00
ML-4100D3	$ 83.00
ML-4500D3	$ 73.00
ML-6060D6	$ 93.00
SCX-4216D3	$ 59.00
SCX-5312D6	$ 79.00
SCX-D4200A	$ 69.00
SF-5100D3	$ 59.00

Canon Toner

Model	TONNY
E-31	$85.00
EP-22	$49.00
EP-25	$49.00
EP-26	$69.00
EP-32	$65.00
EP-52	$80.00
FX-3	$59.00
CART-303	$59.00
CART-N	$76.00
CART-U	$69.00
CART-W	$55.00

BUY ANY 5 TONNY CARTRIDGES & RECEIVE 1 PACK TONNY PREMIUM GLOSSY PAPER FREE! (TPP1846)

Standard Notebook Carry Bag

- Suitable for 15" Notebook
- Polyester

$21.50ea

USB Keypad

- 19 Keys
- Includes Backspace and 000 Key

$15.00

Rechargeable Wireless Optical Mouse

- Available in Pink or Black

$25.50ea

Novel Clip Lamp with LED Light

- AG13 x 3 Battery Included

$3.30

USB 2.0 Dual PC Gamepad

$25.00

Ink refill kits for Canon, HP, Lexmark and Epson — from $4.90

Toner powder also available for HP & Samsung — from $14.95

For purchases under $100 a standard freight charge of $6.50 applies for all areas within Australia.

AUSTRALIA COMPUTER ONLINE

COMPUTER ONLINE

web: www. computeronline.com.au tel: (02) 9747 0001; 9744 6667 fax :(02) 9747 8878

GPS Navigation

GlobalSat Bluetooth GPS receiver from $125 - high sensitivity	
GlobalSat USB GPS Receiver	$75
Holux m-1000 GPS Receiver	$95

Printers

Canon Pixma iP4300	$135
Canon Pixma MX300 fax	$156
HP Photosmart C4385	$179
HP Deskjet F2120	$72

CPU

Intel Pentium Dual Core E2140	$90
Intel Pentium Core 2 Dual E6550	$223
Intel Pentium Core 2 Dual E6750	$249
AMD Athlon Dual Core 4000	$86
AMD Athlon Dual Core 6000	$209

Speakers

Logitech X-530 5.1 $79
Superb 5.1-channel sound system, 70 watts output

Logitech X-240 2.1 speakers	$65
Creative SBS-370 2.1 speakers	$40
Studio Acoustics stereo Indoor/Outdoor speakers	$65

Networking

Netgear DG834G Wireless Modem Router	$115
Linksys AG300 Wired Modem Router	$84
Linksys WAG200G Wireless Modem Router	$115
Netgear 54M Wireless Router WGR614	$69
D-Link ADSL 2/2+ Modem DSL-G604T	$115

Monitors

ASUS 22" wide LCD $389
2ms response time, HDCP supported, 700:1 contrast ratio, built-in speakers, Zero Bright Dot

19" **BenQ** G900W	$250
19" **ASUS** VW193T	$269
19" **LG** L1953T DVI	$266
19" **Viewsonic** VA1912WB	$255
22" **LG** L225WT 5ms	$379
22" **BenQ** FP222W wide LCD	$359
22" **Acer** AL2216WD wide LCD	$359
22" **Viewsonic** VA2226W	$339

CD/DVD RW

Liteon CDRW & DVD Combo	$35
Liteon DH-20A4P DVDRW beige/black	$48
Samsung DVD-RW Dual Layer 16XDVD	$48
LG DVD-RW 18x H55N IDE	$48
LG DVD-RW 18x H62N SATA	$53
LG GSA-E60N DVD-RW 16x External	$119
Pioneer 115D DVD-RW IDE	$48
Pioneer 212D DVD-RW SATA	$46
SONY AWG170 DVD-RW SATA	$47
ASUS DRW2014L1T DVD-RW SATA	$53
ASUS DRW1814BL DVD-RW IDE	$51

Video Cards

ASUS GF7300GS 256M PCI-e	$87
ASUS GF8500GT 512M PCI-e	$120
ASUS GF8600GT 256M PCI-e	$178
ASUS GF8600GT 512M PCI-e	$201
ASUS ATI HD2400Pro 256M PCI-e	$84
ASUS ATI EAX1550 256M PCI-e	$79
ECS GF7600GS 256M PCI-e	$95
ECS GF8500GT 256M PCI-e	$110
Gigabyte GF7200GS 256M PCI-e	$63
Gigabyte GF8600GT 512M PCI-e	$171
Leadtek GF8800GT 512M PCI-e	$375

Motherboards

Gigabyte LGA 775
GA-945PL-S3 Rev. 3.3 $90
intel 945 chipset, Core 2 Duo CPU supported, PCI-e

For Intel CPU

ASUS P5GC-MX/1333	$88
ASUS P5S-MX-SE SIS chipset	$72
ASUS P5K-SE P35 chipset	$139
Gigabyte GA-G31MX-S2	$109
Gigabyte GA-G33M-S2	$145
Gigabyte GA-945GCM-S2L	$83

For AMD CPU

ASUS M2N-MX SE	$76
ASUS M2N-SLI	$159
Gigabyte GA-M61SME-S2L	$80

Hard Disks

Notebook 80Gb	$87
Notebook 120Gb	$99

Seagate - 5 years warranty

80G Barracuda IDE	$65
80G Barracuda SATA 8m buffer	$68
160G Barracuda IDE 2m buffer	$73
160G Barracuda SATA 8m buffer	$77
250G Barracuda IDE 16m buffer	$100
250G Barracuda SATA 16m buffer	$93
320G Barracuda IDE 16m buffer	$119
400G Barracuda IDE 16m buffer	$159
500G Barracuda SATA 16m buffer	$177

Memory/USB drive

512M DDR 3200	$40
1G DDR 3200	$75
1G DDR2 5300	$33
2G kit DDR2 5300	$64
USB drive 1G / 2G / 4G	$18 / $25 / $48

Notebooks

ASUS

A7SV-7S085C	F3L-AP016P	F3SC-AS127E-TM	F3SV-AK136G	G1S-AK048G	V2S-4S031G
- 17" wide WXGA LCD - Core 2 Duo T7500 2.2G - 2G RAM, 250G HDD - DVD RW Dual Layer - nVidia Geforce 8600M - Vista Home Premium	- 15.4" wide WXGA LCD - Core 2 Duo T2330 1.6G - 1G RAM, 160G HDD - DVD RW Dual Layer - Intel X3100 graphics - XP Pro	- 15.4" wide WXGA LCD - Core 2 Duo T7300 2.0G - 2G RAM, 160G HDD - DVD RW Dual Layer - nVidia Geforce 8400M - Vista Business	- 15.4" wide WSXGA LCD - Core 2 Duo T7500 2.0G - 2G RAM, 200G HDD - DVD RW Dual Layer - Geforce 8600 256m - Vista Ultimate	- 15.4" wide WSXGA LCD - Core 2 Duo T7500 2.2G - 2G RAM, 200G HDD - DVD RW Dual Layer -Geforce 8600MGT 512m - Vista Ultimate	- 14.1" wide WXGA LCD - Core 2 Duo T7500 2.2G -2G RAM, 160G HDD - DVD RW Dual Layer -Geforce 8600MGT 512m - Vista Ultimate
$1998	$1199	$1449	$1879	$2325	$2398

HP Business Notebook 530 KD096AA Core Duo T2400 1.83G/15.4" wide LCD / 1G RAM / 120G HDD / DVD RW Dual Layer / Windows Vista Business **$899**

Desktop

From $1012

i-Office
- Slim case can be tower or desktop
- Intel Duo Core processor E4500
- 1G Memory, 160G SATA HDD
- 16x DVDROM
- 19" wide LCD
- Keyboard & Optical Mouse
- XP Professional

From $1688

a-Gamer
- AMD Athlon 64x2 processor
- 1GB Memory, 250G SATA HDD
- 512M nVidia GF 8800GT graphic
- DVD +/- Dual Layer Burner
- 19" LCD, Logitech X530 speakers
- Gaming Keyboard & Laser Mouse
- XP Professional

From $1321

i-775X
- Intel P35 chipset motherboard
- Intel® Core™ 2 Duo CPU E4500
- 512m nForece 8600GT Graphic
- 250GB SATA 2 Hard Disk
- 2G Memory, DVDRW +/- DualLayer
- 19" LCD, Keyboard,Mouse,Speakers
- Vista Home Premium

Software oem

Windows XP Home	$120
Windows XP Professional	$189
Windows XP Professional X64	$209
Windows XP MediaCenter	$170
Windows Vista Home Basic	$130
Windows Vista Home Premium	$149
Windows Vista Business	$185
Windows Vista Ultimate	$248
Office 2007 Home & Student	$189
Office 2007 Pro Academic	$249
Office 2007 Small Business	$215
Office 2007 Small Business	$290
Office 2007 Professional	$389
MS works suite 2006	$95
Kaspersky Internet Security 7.0	$40
Adobe photoshop / Premiere Ad	$145

CartridgeDepot

ORDERING HOTLINE: MON-FRI 9AM-5:30PM (Sydney Time)

1300 736 364

AUSTRALIA

ONLINE ORDERING (7days/24hrs): **www.CartridgeDepot.com.au**

Canon® Genuines !

DEAL 7

BCI-3e / BCI-6 Series Specials

(A) **BCI-3eBk/ 3eC/ 3eM/ 3eY** Only
(1) 1 Set of 4 $65
(2) 2 Sets of 4 $122
(B) **BCI-3eBk/ 6C/ 6M/ 6Y**
(1) 1 Set of 4 $75
(2) 2 Sets of 4 $136
(C) **BCI-3eBk/ 6Bk/ 6C/ 6M/ 6Y**
(1) 1 Set of 5 $95
(2) 2 Sets of 5 $172
(D) **BCI-6 Series**
(Bk / C / M / Y / PC / PM only)
(1) Any 4 $76
(2) Any 6 $110
(3) Any 8 $139
(4) Any 12 $199

DEAL 9

BCI-24 Series Packaged Specials

	BCI-24B	BCI-24C
(1) 2 - Pack	$21	$39
(2) 3 - Pack	$29	$55
(3) 5 - Pack	$45	$89

DEAL 11

PG-40 / CL-41 Specials

(1) 1x PG-40 + 1x CL-41 $64
(2) 2x PG-40 + 1x CL-41 $95
(3) 2x PG-40 + 2x CL-41 $124
(4) 5x PG-40 (Blacks) $144
(5) 5x CL-41 (Colours) $155

DEAL 12

PGI-5Bk / CLI-8 Series Specials

(5Bk, 8Bk / 8C / 8M / 8Y only)

	Only
Any 5	$110
Any 10	$215

Canon® Compatibles

DEAL 1 - BCI-3e / BCI-6 Series

(Colours: Bk, C, M, Y, PC, PM, R, G)

	Only		Only
(A) Any 4	$26	(D) Any 12	$74
(B) Any 8	$54	(E) Any 16	$96
(C) Any 10	$64	(F) Any 20	$115

DEAL 2 - BCI - 21 / BCI - 24 Series

(Black, Colour Ink tanks)

	Blacks	Colours
(A) Any 2	$11	$12
(B) Any 5	$27	$29
(C) Any 8	$43	$46
(D) Any 10	$52	$55

DEAL 8 - PGI-5Bk, CLI-8Bk / 8C / 8M / 8Y / 8PC / 8PM

(Non-chipped cartridges - with instructions)

(A) Any 5	$50
(B) Any 10	$95
(C) Any 15	$135

Brother® Compatibles

DEAL 6 - LC-800, LC-47, LC-57 Series (Black, Cyan, Magenta, Yellow)

(A) Any 4	$36
(B) Any 8	$72
(C) Any 12	$104
(D) Any 16	$136
(E) Any 20	$159

Epson® Genuines !

EPSON

	Only		Only
T026	$35.95	T029	$38.95
T027	$29.95	T038	$17.95
T028	$39.95	T039	$27.95
T0461			$19.95
T0472 - T0474			$12.95 each
T0491 - T0496			$17.50 each
T0561 - T0564			$13.95 each
T0621			$17.95
T0631 - T0634			$12.95 each
T0731 - T0734			$13.95 each
T0811 - T0816			$24.95 each

Epson® Compatibles

DEAL 3

T0321, T0422-T0424, T0461-T0474, T0491-T0496, T0561-T0564, T0621-T0634, T5591-T5596, T0540-T0549, T0731-T0734

	Only		Only
(A) Any 4	$36	(D) Any 12	$99
(B) Any 6	$54	(E) Any 16	$129
(C) Any 8	$69		

DEAL 4

T007, T008, T009, T017, T018, T026, T027, T028, T029, T038, T039

	Only
(A) 1 Bk + 1 Col	$22
(B) 2 Bk + 1 Col	$32
(C) 2 Bk + 2 Col	$44
(D) 4 Bk + 3 Col	$74
(E) 6 Blacks	$60
(F) 6 Colours	$69

HP® Genuines !

C9351AA (21)	$23	#92 $22.50
C9352AA (22)	$26	#93 $31
#21 Twin Pk	$39	#94 $31
#21#22 Combo	$42	#95 $37
C6656A (56)	$28	#96 $44
C6657A (57)	$47	#97 $48
#56 Twin Pk	$50	#98 $27
#56#57 Combo	$68	#02 Bk $27.50
CB335WA (#74)	$24	#02 $14
CB337WA (#75)	$26	(C/M/Y) (Each LC/LM)

HP® Compatibles

Genuine HP cartridges also available!

C6615D (15)	$30
C9351AA (21)	$21
C9352AA (22)	$23
C1823D (23)	$36
51645A (45)	$30
C6656A (56)	$25
C6657A (57)	$36
C6578D (78)	$36
C7865WA (94)	$25
C8766WA (95)	$29
C8767WA (96)	$30
C9363WA (97)	$34

DEAL 10

Remanufactured Cartridge Specials

	Only
(A) 2 x HP 6656 (# 56) Black + 1 x HP 6657 (# 57) Colour	$80
(B) 2 x HP 8727 (# 27) Black + 1 x HP 8728 (# 28) Colour	$74

Compatible Toners

For Brother Lasers

TN-2025	$75
TN-3060	$72
TN-3185	$75
TN-6600	$69
TN-7600	$69

For Canon Lasers

CART303	$55	EP-26	$69
CARTU	$69	EP-32	$69
CARTW	$95	EP-52	$80
E-31	$89	EPV	$55
EP-22	$49	FX3	$65
EP-25	$55	FX4	$65

For HP Lasers

C3903A	$55	Q1339A	$130
C4092A	$49	Q2610A	$115
C4096A	$69	Q2612A	$55
C4127X	$80	Q2613A	$55
C7115A	$55	Q5942X	$125
C7115X	$69	Q5949X	$79
Q1338A	$145	Q6511A	$115

For Lexmark Lasers

12A6835	$179
12A7462	$179
12A8400	$79
1382925	$139
(High Yield of 1382920)	
18S0090	$79
34217HR	$79
64017HR	$169
64037HR	$169

Lexmark® Compatibles

Quality New & Remanufactured Cartridges

Original Lexmark cartridges available too!

10N0016 (16)	$36
15M0120 (20)	$38
10N0026 (26)	$38
18C0034 (34)	$30
18C0035 (35)	$38
17G0060 (60)	$38
12A1970 (70)	$36
12A1980 (80)	$38
18L0032 (82)	$36
18L0042 (83)	$38

HP® Compatibles

For HP # 02 range	Only
C8721WA Black	$16.50
C8771WA - 8775WA	$11 each
1 set for HP # 02	$68 / set
For HP # 10 range	
C4844AD (Black)	$30
C4841A - 4843A	$28 each
1 set for HP # 10	$105 / set
For HP # 11 range	
C4836A - C4838A	$22 each
1 Set (#10 black + #11 C4836A - C4838A)	$85 / set
For HP # 14 range	
C5010D (Tri-colour)	$26
C5011D (Black)	$24

LOOK for more SPECIALS, cartridge models & paper products on our website!!!

- ✓ 100% Compatible Cartridges
- ✓ 6 Months Manufacturers' Warranty
- ✓ No Additional Credit Card Charge
- ✓ All Prices GST-inclusive
- ✓ Easy-to-Reach Technical Support
- ✓ FREE postage for purchases over $60 (ordinary mail, Australia-Wide)

Quality USA Formulabs® Inks

ISO 9001 Certified

ORDERS OVER $60

FREE POSTAGE

(australia-wide)

(Nominal 5.50 P&H for other orders)

Recommended easy upgrade to: Registered Post for just $1.50 extra!

128-Bit Secure Online Ordering System

Visa Card/Mastercards
Cheques / Money Orders accepted

Refill Kits & Refill Inks

Specific Refill kits for HP (90mL each) Only

# 45 / # 15 / # 40	$22
# 78 / # 23 / # 17	$24
# 56 / 27 / # 21	$22
# 57 / # 28 / # 22	$24
# 92 / # 94 / # 96 / # 98	$22
# 93 / # 95 / # 97	$24

Refill kits for Lexmark (90mL each)

# 16 / # 17	$22	# 82	$22
# 26 / # 27	$24	# 83	$24
# 32 / # 34	$22		
# 33 / # 35 / # 1	$24		

Universal Refill Inks (2mL each) Each

For Canon (Bk / C / M / Y)	$6.50
For HP (Bk / C / M / Y)	$6.50
For Lexmark (Bk / C / M / Y)	$6.50
1 Set of 4 (any colour)	$22

CartridgeDepot Australia
www.CartridgeDepot.com.au

Mailing Address:
PO Box 401, Turramurra NSW 2074
Tel: 1300 736 364
Fax: (02) 9943 5072
Email:
sales@CartridgeDepot.com.au

#1 Prices printed here are correct as of the time of printing. CartridgeDepot Australia reserves the right to change and withdraw prices and specials at any time without prior notice. #2 All brands and trademarks such as "Canon®, S-Epson®, Brother®, HP®, Lexmark®" are properties of their owners and are mentioned here for descriptive purposes only.

PCU Nov 2007 Issue

Synology®
www.synology.com

Your Perfect Network Center

SmallNetBuilder: "A Good NAS Gets Better!"

Synology Fast 500MHz CPU Models

CS407
500MHz CPU, 128MB RAM
Max. capacity: 4TB

DS207+ NEW!
500MHz CPU, 128MB RAM
Max. Capacity: 2TB

RS407
500MHz CPU, 128MB RAM
Max. Capacity: 4TB

Synology NAS Products Offer Superior Performance, Secured Data Protection, and Innovative Applications to Serve Small Business, SOHO, and Power Computer Users.

Internet Publishing

- Website Publishing
- Photo & Video Sharing with Access Control
- Ez-Internet with DDNS Integration
- Web-based File Browser for File Access from Anywhere
- FTP Access with Flexible Settings

Multimedia Sharing

- Multimedia Streaming to UPnP Devices
- Music Sharing for iTunes Clients
- Music, Internet Radio, and iPod Playback with USB Speakers
- Download via BT/FTP/HTTP without PC

Comprehensive Security Features

- Windows ADS/NT4 Integration
- HTTPS Support
- Encrypted FTP over Explicit SSL or TLS
- FTP Auto-block for Uninvited Attempts

Total Backup Solutions

- Network Backup with Rsync Support
- Local Backup to External Hard Drives
- Desktop Backup Using *Synology Data Replicator II*
- One-touch Backup with USBCopy*
- 3rd-party Backup Software Supported

Awards from 2007

FortuneTec
Tomorrows Technology Today
www.fortunetec.com.au

Fortune Tec Pty Ltd. sales@fortunetec.com.au
Sydney Office
(61) 02-9748-0001 voice
(61) 02-9748-0095 fax
Unit 2, 13 Millennium Court
Silverwater, NSW 2128
Australia

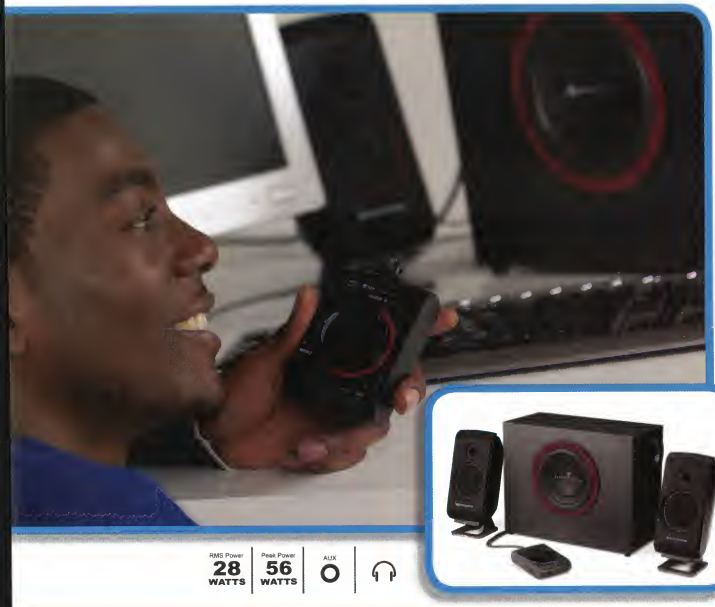
*Disk Station DS207+ only. **Specifications are subject to change without notice.

ALTEC LANSING

70 Years AUDIO INNOVATION

Great Looks, Great Sound, Great Value!

Big sound comes in a surprisingly small package. The VS2421 is a versatile, value-priced, full-spectrum sound system. And with its small footprint, it's the perfect companion for your PC. It even includes a built-in microphone for Internet calls.



www.anyware.com.au

Anyware™ COMPUTER ACCESSORIES

SYDNEY MELBOURNE PERTH ADELAIDE BRISBANE AUCKLAND

1300 ANYWARE (1300 269 927)

Anyware is a wholesaler and does not sell direct to public. The above products can be purchased from most independent computer dealers throughout Australia. Call the number above for your nearest reseller.

Australia's Best Value Hosting Provider

Free Domain Name

with every new package

Clustered Hosting
- Load Balanced Cluster
- Plesk Reloaded
- 250Mb Web Space
- 8Gb Monthly Transfer
- 25 POP3 Accounts

from $25 per month

Web Hosting
- Linux / Windows
- 250Mb Web Space
- 4Gb Monthly Transfer
- 20 POP3 Accounts
- Daily Backups

from $125 per year

Dedicated Servers
- Brisbane Datacenters
- 99.9% Network SLA
- Multiple High Speed Links with IX Peering
- Dell Rackmount Servers
- Upto 400Gb Traffic

from $179 per month

Hosting Shop
Making the Net Work

Domain Names

.com.au $55 / 2yrs

.com $22 / yr

Free .com, .net, .org, .info, .biz with all new hosting packages

www.hostingshop.com.au - info@hostingshop.com.au - 1300 886 484

Host Networks

phone: 1300 662 103
www.hostnetworks.com.au

Australian Internet Data Centre:
Think Globally, Host Locally
...premium quality at affordable prices

Web Hosting
Australian located dedicated web servers. Personal and small business hosting at affordable prices. *Reseller plans available.*
- FROM $66/yr

Dedicated Servers
Entry level to Enterprise Dedicated Servers available. Hosted on our redundant Cisco Core Network for optimal reliability.
- FROM $198/m

Co-Location
From 1 Server to multiple cabinets. Our own state-of-the-art, Carrier Neutral facility serviced by multiple fibre carriers in Brisbane.
- FROM $88/m

Domain Registration
Register your Domain Names now including .com/.net/.org/.com.au/.net.au
- FROM $13.75/yr

Prices subject to change without notice. All prices include GST

cPanel Hosting
50MB Storage
2GB Bandwidth
$66/yr

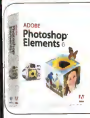
Dedicated Servers
QUAD-CORE XEON
Performance Servers
200GB Bandwidth
from $297/m

Co-Location
1-2RU Co-Location
From $88/m

Co-Location
42RU Cabinet
Various Data Methods
from $990/m

SoftwareTime

www.softwaretime.com.au



Adobe PhotoShop Elements 6

Full	$129.00
Education Edition	$89.95

Adobe Dreamweaver CS3

Full	$542.00
Upgrade	$269.00
Education Edition	$259.95

Adobe CS3 Design Standard

Full	$1,615.00
Upgrade	$545.00
Education Edition	$519.00
Student Edition	$279.95

Adobe PhotoShop Elements 6/Premiere Elements 4

Full	$189.95
Education Edition	$124.95

Adobe PhotoShop Lightroom

Full	$385.00
Education Edition	$129.95

Adobe CS3 Design Premium

Full	$2,399.00
Upgrade	$809.00
Education Edition	$769.00
Student Edition	$419.95

Microsoft Office 2007

Home/Student	$185.00
Small Business Full	$649.00
Small Business Upg	$405.00
Standard Full	$575.00
Standard Upgrade	$349.00
Professional Full	$725.00
Professional Upgrade	$465.00
Professional Educ	$238.00
Ultimate Full	$979.00
Ultimate Upgrade	$785.00

Microsoft Project 2007 Standard

Full	$875.00
5 User Pack	$3,815.00
Upgrade	$499.00
Academic Edition	$99.95

AutoCAD LT 2008

Full	$1,885.00
Upgrade	$775.00
1 Year Subscription	$355.00

Paint Shop Pro Photo X2

Full	$124.95
Upgrade	$79.95
Education Edition	$84.95

Business Software

Adobe Acrobat 8 Professional	$565.00
Adobe Acrobat 8 Professional Upgrade	$209.00
Adobe Contribute CS3	$231.00
Adobe CS3 Master Collection	$3,340.00
Adobe CS3 Production Premium	$2,395.00
Adobe CS3 Web Premium	$2,170.00
Adobe CS3 Web Premium Upgrade	$675.00
Adobe CS3 Web Standard	$1,345.00
Adobe Illustrator CS3	$815.00
Adobe Indesign CS3	$945.00
Adobe Indesign CS3 Upgrade	$269.00
Adobe Flash Pro CS3	$945.00
Adobe PhotoShop CS3	$875.00
Adobe PhotoShop CS3 Upgrade	$269.00
CorelDraw Graphics Suite X3	$519.00
CorelDraw Graphics Suite X3 Upgrade	$235.00
Corel Painter X	$549.00
Dragon Naturally Speaking 9 Standard	$149.95
Dragon Naturally Speaking 9 Preferred	$295.00
FileMaker Pro 9	$465.00
Microsoft Access 2007 Upgrade	$149.95
Microsoft Expression Web	$459.00
Microsoft Publisher 2007	$245.00
Microsoft Visio 2007 Standard	$375.00
Microsoft Visual Studio 2008 Pro	$1,165.00
Microsoft Visual Studio 2008 Pro Upg	$798.00
Microsoft Windows Vista Home Premium	$375.00
MYOB Accounting 17	$279.00
MYOB Accounting Plus 17	$475.00
MYOB Accounting Plus 17 Upgrade	$295.00
Nero 8	$159.95
Norton 360 (3 Users)	$104.95
Norton AntiVirus 2008	$39.95
Norton Internet Security 2008	$84.95
Omnipage 16	$155.00
Pinnacle Studio 11 Ultimate	$246.00
QuarkXpress 7 Upgrade	$465.00
Roxio Easy Media Creator 10 Suite	$128.00
Sony Sound Forge Audio Studio 9	$129.95
Sony Vegas Movie Studio 8 Platinum	$189.95
TurboCAD 14 Pro (Non-Commercial)	$249.95

Academic Software

3D Studio Max 2008 Student (14 mnths)	$259.00
Adobe Contribute CS3	$119.00
Adobe CS3 Master Collection	$1295.00
Adobe CS3 Web Premium	$645.00
Adobe Illustrator CS3	$259.95
Adobe Indesign CS3	$259.95
Adobe PhotoShop CS3 Extended	$389.00
AutoCAD 2008 Student (14 months)	$159.00
CorelDraw Graphics Suite X3	$134.95
Corel Painter X	$138.00
Cubase 4	$615.00
Dragon Naturally Speaking 9 Standard	$92.00
Dragon Naturally Speaking 9 Preferred	$285.00
FileMaker Pro 9	$285.00
Microsoft Expression Web	$92.00
Microsoft Publisher 2007	$134.95
Microsoft Visual Studio 2008 Pro	$159.95
QuarkXpress 7	$234.00
Sony Vegas Movie Studio 8 Platinum	$159.95
Wacom Intuos3 6x8 Graphics Tablet	$325.00

Adobe CS3 Student Editions

Adobe PhotoShop CS3 Extended	$215.00
Adobe CS3 Design Standard	$279.95
Adobe CS3 Design Premium	$419.95
Adobe CS3 Web Standard	$279.95
Adobe CS3 Production Premium	$419.95
Adobe CS3 Master Collection	$689.00

FREE BONUS: Purchase an Adobe CS3 Student edition from Software Time before 30th April 2008 and receive via redemption a free bonus Teach Yourself Adobe CS3 All in One Training Book plus an Adobe Student Video Workshop DVD valued at $79.95.

FreeCall: 1800 655 887

Software Time Australia Pty Ltd (ABN: 81 088 382 923)
58-60 Buckingham St, Surry Hills, NSW, 2010
Ph: 02 9319 0466 Fax: 02 9319 7078
Email: sales@softwaretime.com.au

Prices include GST and are subject to change without notice.
Australia wide delivery - Mention this ad for free delivery.
Please contact us for products not listed.

CD & DVD DUPLICATION

BUSINESS CARD AND MINI CDs
IN HOUSE MULTIMEDIA, DESIGN,
PRINTING & PACKAGING
DVD AUTHORING
ANY QUANTITY

MultipliCD
CD DUPLICATION SERVICES

689 Malvern Rd, Toorak, Vic, 3142
www.duplication.com.au
Email: sales@duplication.com.au
PH: (03) 9827 6588

Shopwise Classifieds

- Highest Selling Technology title in Australia*, reaching 281,000 readers each month
- Highest readership in demographics:**
  - AB Socio
  - Professional/ Mangers
  - IT Professionals
- An audience of active early adopter technology buyers

*Source: Audit Bureau of Circulation Jun-07
** Source: Roy Morgan Research Sep-07

For Advertising enquiries contact:
Matt Rogers- 02 9288 9158
mrogers@acpmagazines.com.au

CyberLink

Certified for Windows Vista

Enjoy with intel Core 2 Duo inside

Total HD 1080i

Personal Computer World RECOMMENDED

Computer Bild Preis-Leistungs-Sieger

CHIP TEST GUT CyberLink PowerDirector 5 06/2007

Sehr gut

PC WELT SOFTWARE Gesamtnote 2,2 (gut) AUSGABE 08/07

Foto Praxis Preis/Leistung sehr gut Testsieger gut

PC Praxis Preis/Leistung sehr gut Testsieger gut

CyberLink PowerDirector v6

Magic Video Editing for Creating Dynamic Home Movies

RRP $159

Easy Magic Editing

Create quality videos with title, effects & more via automatic Magic editing tools

Pro Moviemaking

Advanced keyframe PiPs, menu editor & timeline and frame by frame editing

Incredible High Definition

Import videos from HDV / AVCHD camcorders to create HD movies

Mobile Media

Publish movies on YouTube or watch while on the go using iPods & PSP's

For more information visit www.cyberlink.com

Available from: city parkers, Harvey Norman, harris technology, HOMAYNE, CITY SOFTWARE

Distributed by LAKO www.lako.com.au

The Epson Stylus CX9300F has so many features that it puts other office equipment t shame. Not only does it print, scan, copy and fax, it uses Epson DURABrite™ Ultra ink cartridges for all your low-cost office printing needs. So whatever your business, there's a complete range of printers to satisfy your needs; making Epson the most versatile worke for your business. Visit **www.epson.com.au/office** for more information.

Epson Stylus Photo RX690
- Print, scan and copy
- LCD viewer, PictBridge and card slots
- Direct print to CDs/DVDs
- Optional Auto-Duplexer

Epson Stylus CX8300
- Print, scan and copy
- LCD viewer, PictBridge and card slots
- Individual DURABrite Ultra ink cartridges – sharp black text

Epson Stylus C110
- Up to 37 pages per minute – super fast print speed
- Individual DURABrit Ultra ink cartridges sharp black text